**Order Number MOP00080014C2**

## Microwave Oven

INVERTER
SYSTEM INSIDE

# NN-A750WB / NN-A720MB / NN-A770SB

## 27L
## WHITE SILVER STAINLESS
## United Kingdom

## SPECIFICATIONS

**Specification**

| | |
|---|---|
| **Power Source** | **240VAC Single phase, 50Hz** |
| **Power Requirements** | **Micro 1260W Grill 1360W Conv 1470w Combi 2770W** |
| **Output (IEC705-88)** | **Micro 1000W Grill 1300W Conv 1400W** |
| **Microwave Frequency** | **2450MHz** |
| **Timer** | **99 Minutes 99 Seconds** |
| **Oven Cavity Size** | **27L** |
| **Outside Dimensions** | **510mm(W) x 477mm(D) x 314mm(H)** |
| **Inside Dimensions** | **359mm(W) x 352mm(D) x 217mm(H)** |
| **Weight** | **15Kg** |

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# 1. Inverter Warning

**The inverter board looks like a regular PCB, however, this PCB drives the magnetron tube using very high voltages and current.**
**It has**

1. **Very high voltage and high current**
2. **An Aluminium heat sink that becomes very hot**
3. **The capacitors on the inverter circuit will contain a high voltage charge even when the oven is not operating.**

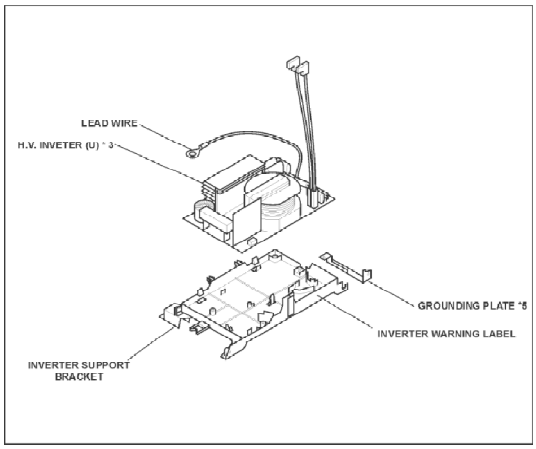
**Do not**

1. **Do not touch the circuitry as it contains very high voltages. When replacing the board please take extreme care to avoid possible electric shock. High voltages may remain in the circuit.**
2. **Do not touch the aluminium heat sink as it will become very hot. It also contains high voltages.**
3. **Do not attempt to repair the inverter PCB as this can be very dangerous. Replace the high voltage inverter circuit as a complete unit. Return the old unit fully repacked in the original shipping box and completed paper work.**
4. **Do not adjust or tamper with the preset volume on the inverter board. It is very dangerous to adjust this preset without proper**

**test equipment.**

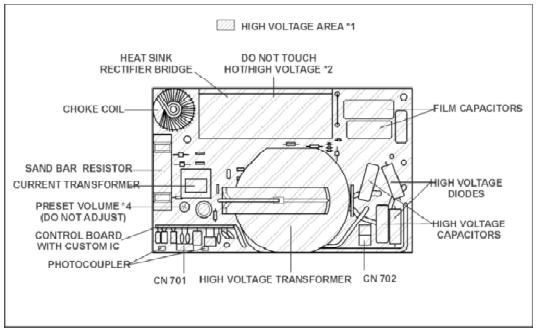
5. **Do not test the oven while the inverter grounding strip or screws are loose. It is very dangerous to operate the inverter circuit board with out a proper ground connection.**

**Figure 1**




**Inverter Power Supply Diagram**

**Figure 2**



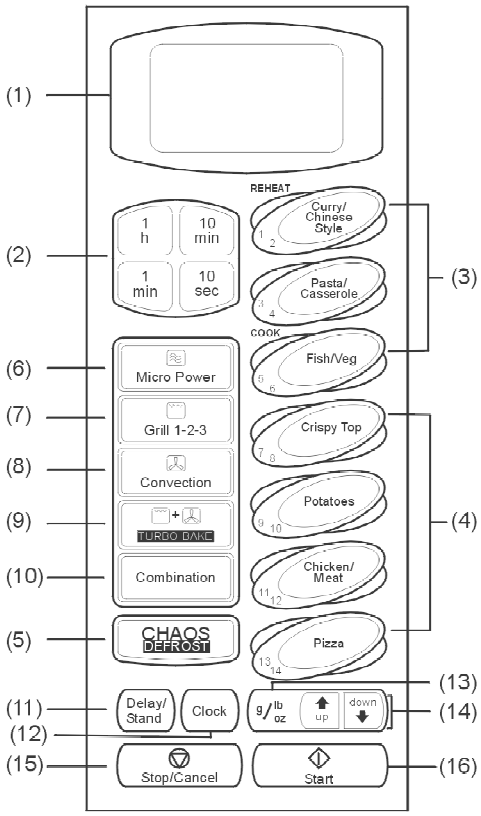

**Inverter Layout**

# 2. Feature Chart

| Function | |
|---|---|
| Microwave | 6 |
| Grill | 3 |
| Convection | 17 |
| Combination | YES |
| Weight Defrost | 3 |
| Weight Combination | 8 |
| Weight Reheat | 4 |
| Weight Cook | 2 |
| Stage Cooking | 3 Stage |
| Delay / Stand | Yes |
| Kg lb./oz. | Yes |
| Clock | 12 Hour |
| Word Prompt | English |

# 3. Control Panels

NN-A750/A720/A770*




The design of your control panel may vary from the panel displayed (depending on color), but the words on the pad will stay the same.

(1) **Display Window**
(2) **Time Pads**
(3) **Auto Weight Microwave Programs**
(4) **Auto Weight Combination Programs**
(5) **Auto Weight Defrost Programs**
(6) **Microwave Power Setting**
(7) **Grill Setting**
(8) **Convection Setting**
(9) **TURBO-BAKE pad**
(10) **Combination Pad**
(11) **Delay/Stand Pad**
This can be used to delay a Cooking program for up to 9 hrs 99 Minutes, or used to set a standing time.
(12) **Clock Pad**
(13) **lb/oz Conversion Pad**
(14) **Weight Selection Pads**
(15) **Stop Cancel Pad:**

**Before Cooking**
One press clears your instructions

**During Cooking**
One press temporarily stops the cooking program.
Another press cancels all your instructions and the time of the day will appear in the display

(16) **Start Pad**
Press to start operating the oven.
If during cooking the door is opened or the stop cancel pad is pressed once , the start pad has to be pressed once to continue cooking.

**Beep Sound**
A beep sounds when a pad is pressed. If this beep does not sound, the setting is incorrect. When the oven changes from one function to another, two beeps sound. After completion of cooking, five beeps sound

# 4. Operation And Digital Programmer Circuit Test Procedure

## 4.1. Setting The Clock

### 1. Plug the power supply cord into the wall outlet

*WELCOME TO PANASONIC REFER TO OPERATING INSTRUCTIONS*

### 2. Press the clock pad

**SET TIME**

### 3. Enter the time of the day

11:25
_ _ PRESS CLOCK

**4. Press the clock pad**

11 : 25

### 4.2. Microwave Cooking

**1. Place a water load in the oven**

**2. Press Micro power once to set high power**

HIGH

_ _ SET TIME

**3. Set time at 5 sec. by pressing**
**1 sec. pad 5 times**

HIGH

10
sec

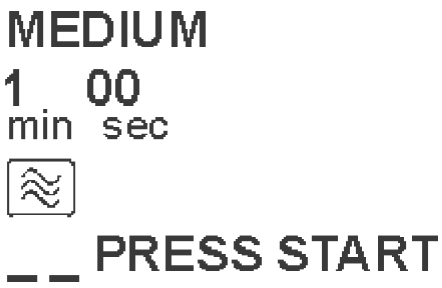
_ _ PRESS START

**4. Press Micro power pad 3 times to set medium power**

MEDIUM

_ _ SET TIME

**5. Set pad for 1 minute by pressing 1 min. pad once**




**6. Press the start pad**

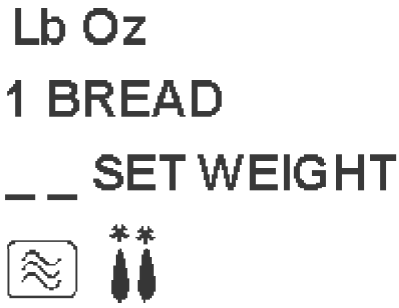
**7. When the first stage cooking has elapsed oven automatically switches to second stage**

**8. When second stage cooking has elapsed oven bleeps 5 times and shuts off**

### 4.3. Auto Weight Defrost

**1. Select the desired program**

**2. Press g or lb. and oz.**




**3. Enter the weight by pressing the Up & Down Pads.**

**4. Press Start**

## 4.4. Delay Stand

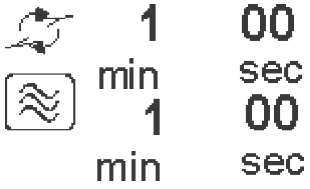
**1. Set power level and time**

**-**

**2. Press Stand**

**3. Set standing time**

**4. Press Start**




## 4.5. Delay Start

**1. Press delay**

**2. Set delay time**

**3. Set power level and time**

4. Press start pad

## 4.6. Grill Operation

1. Select grill power press once for grill 1

2. Set cooking time

3. Press start

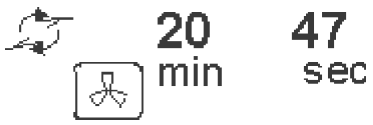
## 4.7. Convection Operation

1. Press convection pad to select oven temperature

2. Press start to preheat

3. Press time pads to enter cooking time

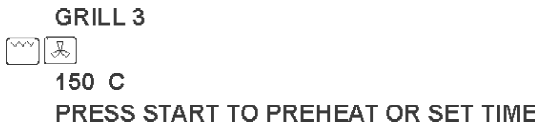
**4. Press start pad**




## 4.8. Turbo Bake Operation

**1. Press turbo bake pad to select oven temperature**

**2. Press grill pad to select grill power**



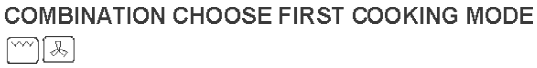

**3. Press start to preheat**

**4. Press time pads to enter cooking time**

**5. Press start**

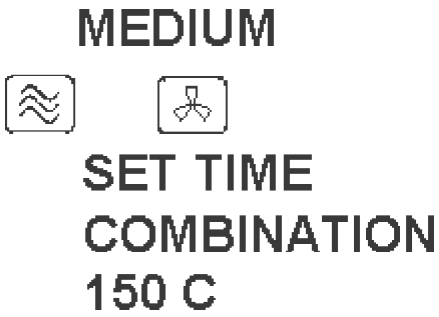
## 4.9. Combination Cooking (Convection And Microwave)

**1. Press combination pad**



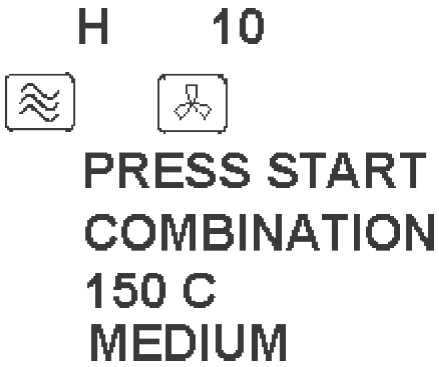

**2. Press convection pad to select oven temperature**

**3. Select micro power**




**4. Press start if preheating**

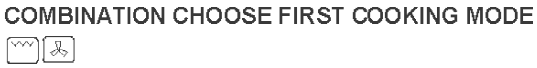
**5. Set cooking time**



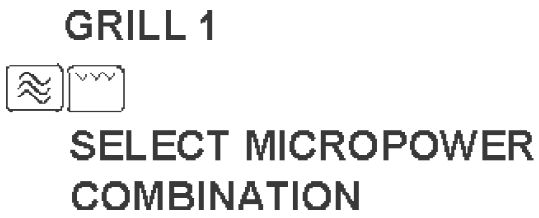

**6. Press start pad**

## 4.10. Combination Cooking (Grill And Microwave)

**1. Press combination pad**




**2. Press grill pad to select oven temperature**




**3. Select micro power**

**4. Set cooking time**

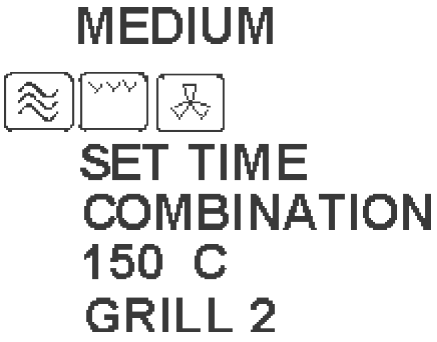
**5. Press start pad**

## 4.11. Combination Cooking (Turbo Bake And Microwave)

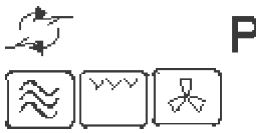
**1. Press combination pad**

**2. Press convection pad to select oven temperature**

**3. Select micro power**




**4. Press start if preheating**

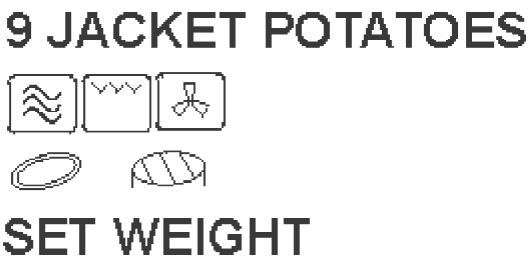



**5. Set cooking time**

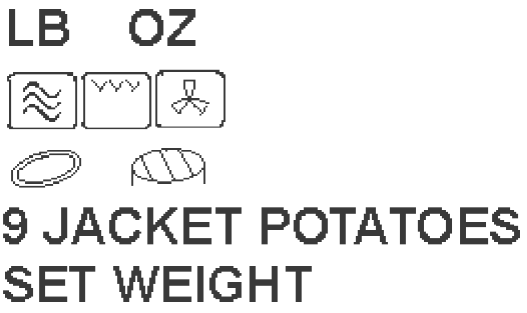
**6. Press start pad**

### 4.12. Auto Weight Cook Programs

**1. Select the desired auto weight cook program**




**2. Press to select grams or pounds and ounces**

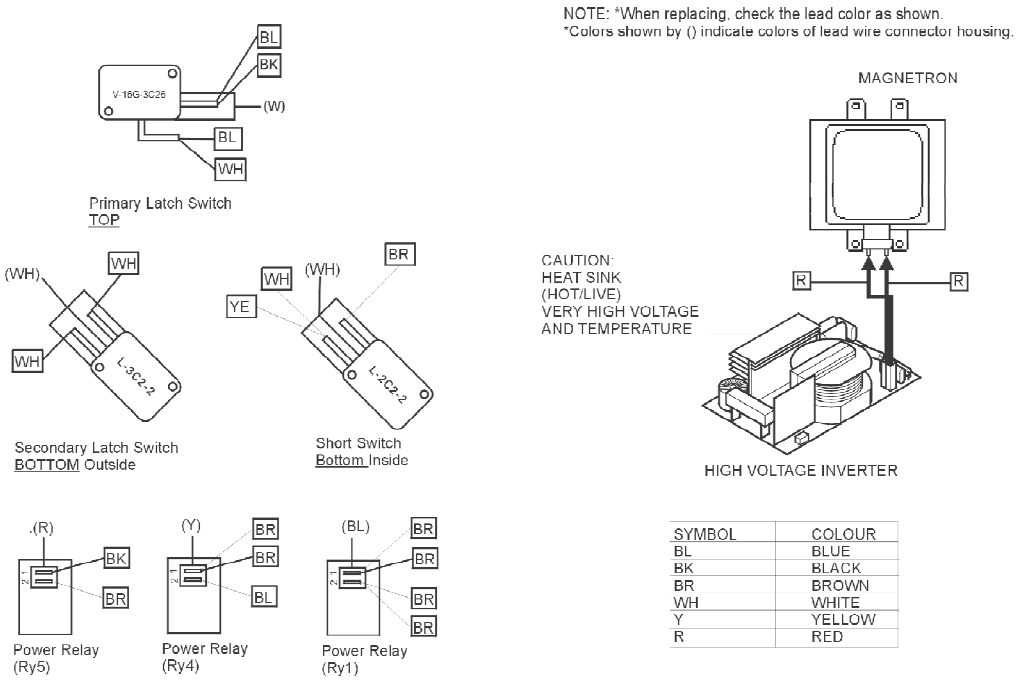



**3. Enter the weight by pressing the up and down pads**

**4. Press Start**

## 5. Schematic Diagram

# 6. Wiring Diagram




# 7. Description of Operating instruction

## 7.1. Variable power cooking control

**The HIGH VOLTAGE INVERTER POWER SUPPLY controls the output power by a signal from the digital Programmer circuit DPC. The power relay (RY1) turns on to supply power to the inverter circuit. The level of output power is controlled by the drive signal level form the inverter circuit. NOTE1: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating the magnetron filament. / NOTE: 2 If microwave cooking is over 8 minutes on HIGH power, the fan motor rotates for 1 minute after cooking to cool the oven and electrical components.**

**Duty cycles for microwave cooking**

| | Output | Duty ON/OFF | |
|---|---|---|---|
| | | ON time | OFF time |
| High | 1000W | 22” | 0” |
| Defrost | 440W | 16” | 6” |
| Medium | 600W | 22” | 0” |
| Low | 440W | 22” | 0” |
| Simmer | 440W | 15” | 7” |
| Warm | 440W | 8” | 14” |

## 7.2. Grill Cooking

**The digital programmer circuit controls the grill power by operating the power relay RY4 in the sequence shown in the table below**

**Duty cycles for Grill Cooking**

| | Duty ON/OFF | |
|---|---|---|
| | ON Time | OFF Time |
| Grill 1 | 33” | 0” |
| Grill 2 | 24” | 9” |
| Grill 3 | 18” | 15” |

## 7.3. Auto weight defrost, Auto weight Cook

**When an auto control feature is selected and the start pad pressed:**

1. **The digital programmer circuit determines the power level and the cooking time and indicates the operating state in the display. The table shows the corresponding cooking times for each category and its respective weight.**
2. **When the cooking time in the display window has elapsed, the oven turns off automatically via the control signal from the digital programmer circuit.**
   **Note: After auto cooking if the oven temperature is over the predetermined temperature the fan motor rotates to cool the oven and its components.**

**Auto Weight Defrost**

| Category | 1st Touch Weight | Cooking Time |
|---|---|---|
| Bread | 100g | 45s |
| Meat Items | 200g | 2m 10s |
| Meat Joints | 400g | 6m 20s |

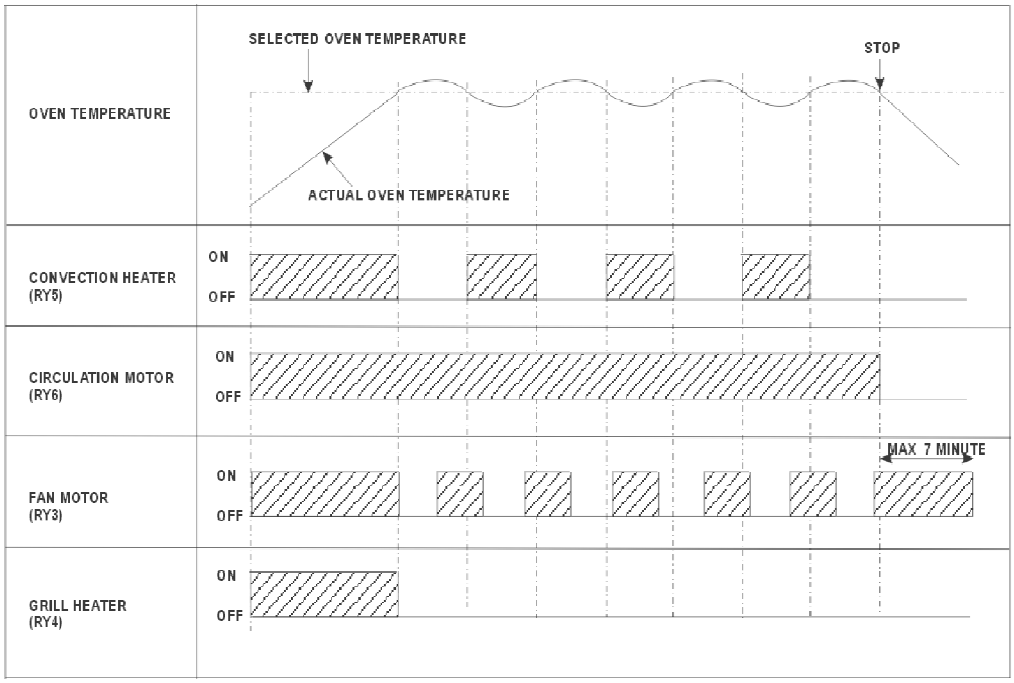
**Auto weight Cook**

| Category | 1st Touch Weight | Cooking Time |
|---|---|---|
| 1.Curry | 300g | 3m 30s |
| 2.Chinese Style | 200g | 2m 10s |
| 3.Pasta | 250g | 2m 55s |
| 4.Casserole | 300g | 3m 15s |
| 5.Fresh Fish | 100g | 1m 30s |
| 6.Fresh Vegetables | 100g | 2m 20s |
| 7.Chilled Crispy Top | 300g | 8m |
| 8.Frozen Crispy Top | 300g | 12m |
| 9.Jacket Potatoes | 200g | 9m |
| 10.Frozen Potato Products | 200g | 8m |
| 11.Whole Chicken | 1000g | 19m 20s |
| 12.Lamb/Beef | 500g | 14m 40s |
| 13.Chilled Pizza | 200g | 6m 40s |
| 14.Frozen Pizza | 200g | 9m |

## 7.4. Convection Cooking

1. **The digital programmer circuit operates the power relays RY3,RY5 and RY6 in the sequence as shown in the figure below.**
2. **When the oven reaches a predetermined temperature the digital programmer circuit stops supplying power to relay RY5, resulting in the convection heater turning off.**
3. **When the temperature drops below the predetermined temperature, the digital programmer circuit supplies power to power relay RY5 resulting in the convection heater turning on. Note: After the convection process, if the oven temperature is higher than the predetermined temperature, the fan motor rotates to cool the electronic components and the oven.**

**Figure1**




**Convection Cooking Duty Cycles**

## 7.5. Combination Cooking

**Combination cooking is achieved by operating the microwave and heater modes together during one cooking cycle. There are three combination modes.**

## 1. Combination (convection and microwave)

## 2. Combination (grill and microwave)

## 3. Combination (grill, convection and microwave)

**The digital programmer circuit operators the power relays as shown in the figures below. When the oven temperature reaches the predetermined temperature, the digital programmer circuit stops supplying power to relay (RY5) resulting in the convection heater turning off. During this time the digital programmer circuit continues to operate relay (RY1) so that microwave activity continues at the duty cycle selected. The inverter control signal level is also maintained. The microwave activity continues to cycle until the entire cooking program is completed.**
**When the oven temperature drops below the selected temperature, the digital programmer circuit operates power relay (RY5) switching on the heater elements.**
**In the case of grill combination the sequence applies with the digital programmer circuit switching power relay (RY4) to control, the grill elements.**
**With convection, grill and micro power combination. The grill elements and convection elements are operated alternatively whilst the oven temperature is above the selected level.**

**Convection And Microwave Combination Duty Cycles**

| Convection Heater | Micropower | | | |
|---|---|---|---|---|
| 100 - 250 C | | OUTPUT | ON | OFF |
| | Medium | 600W | 22 | 0 |
| | Low | 440W | 22 | 0 |
| | Simmer | 440W | 14 | 8 |
| | Warm | 440W | 7 | 15 |

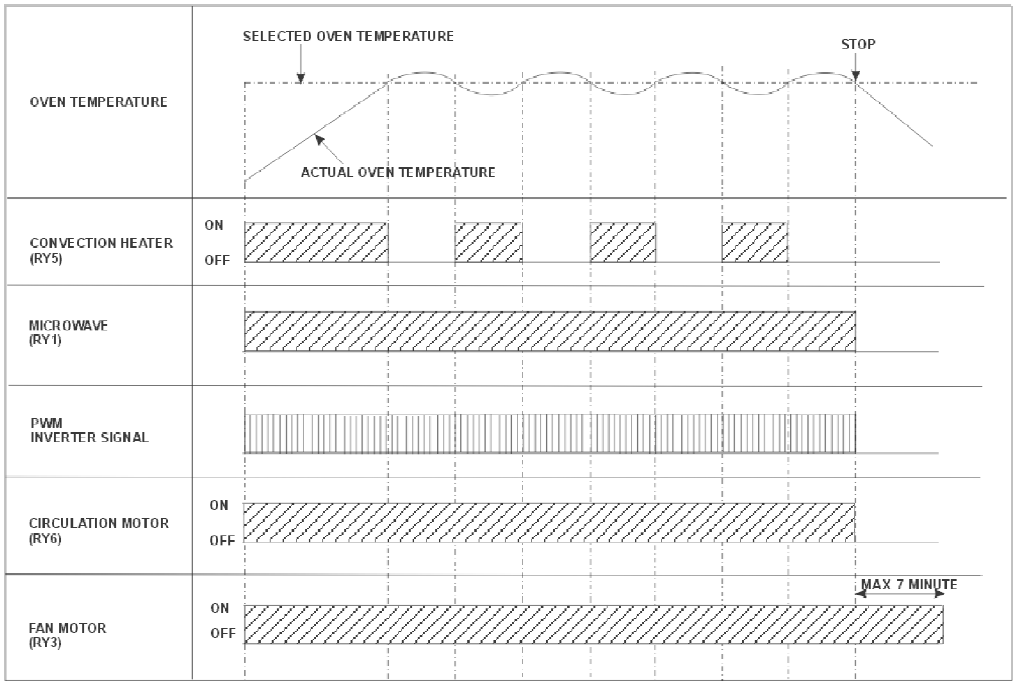
**Grill And Microwave Combination Duty Cycles**

| Grill Heater | | | Micropower | | | |
|---|---|---|---|---|---|---|
| | ON | OFF | | OUTPUT | ON | OFF |
| Grill 1 | 66 | 0 | Medium | 600W | 22 | 0 |
| Grill 2 | 48 | 18 | Low | 440W | 22 | 0 |
| Grill 3 | 36 | 30 | Simmer | 440W | 14 | 8 |
| | | | Warm | 440W | 7 | 15 |

**Grill Convection And Microwave Combination Duty Cycles**

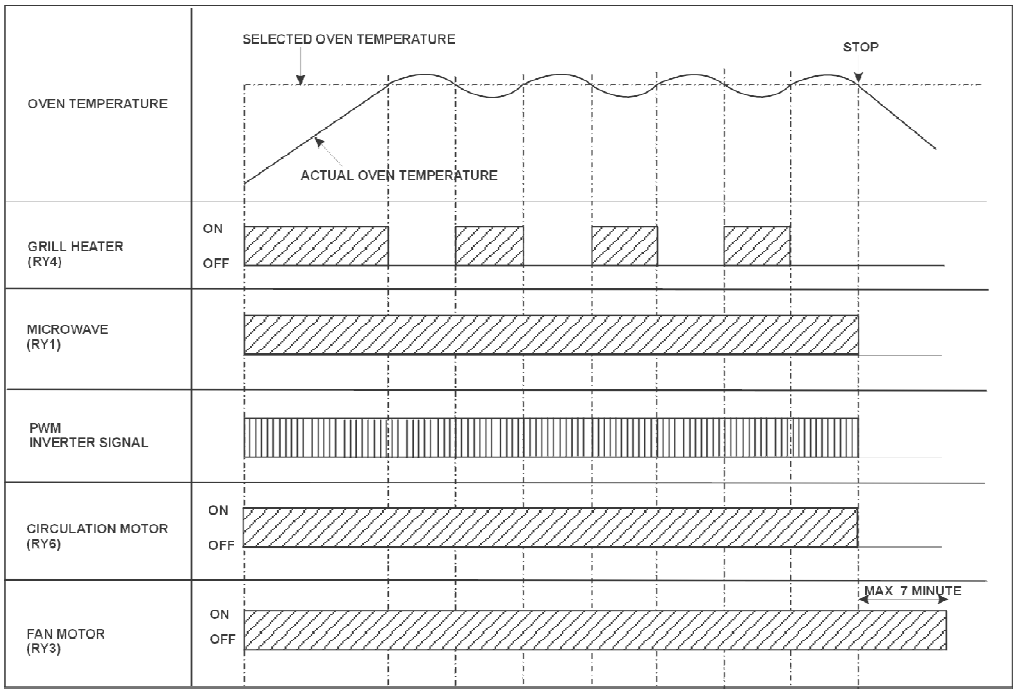
| Convection Heater | Grill Heater | | | Micropower | | | |
|---|---|---|---|---|---|---|---|
| 100 - 250 C | | ON | OFF | | OUTPUT | ON | OFF |
| | Grill 1 | 66 | 0 | Medium | 600W | 22 | 0 |
| | Grill 2 | 48 | 18 | Low | 440W | 22 | 0 |
| | Grill 3 | 36 | 30 | Simmer | 440W | 14 | 8 |
| | | | | Warm | 440W | 7 | 15 |

**Figure 1**



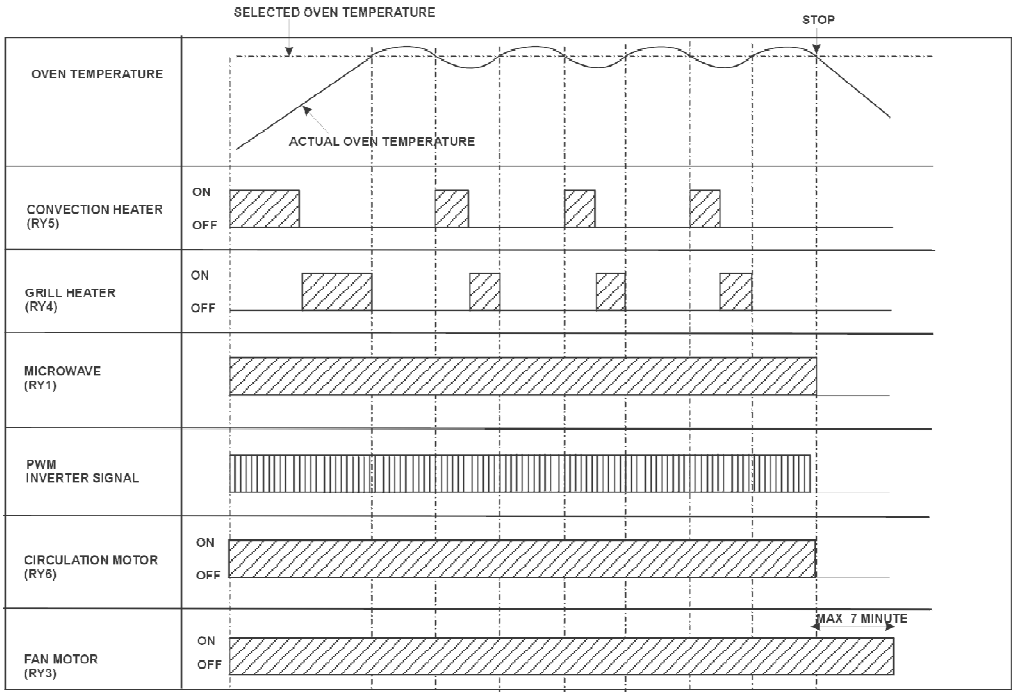

**Convection And Microwave Duty Cycles**

**Figure 2**




**Grill and Microwave Duty Cycles**

**Figure 3**




**Grill, Convection And Microwave Duty Cycles**

# 8. Cautions to Be Observed When Troubleshooting

**Unlike many other appliances, the microwave oven is a high voltage, high current is device. Though it is free from danger in ordinary use, extreme care should be taken during repair.**

**Caution**

**Servicemen should remove their watches whenever working close to or replacing the magnetron.**

## 8.1. Check the grounding

**Do not operate on a two wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.**

## 8.2. Inverter Warnings

**DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LINE) OF THE INVERTER POWER SUPPLY (U)**

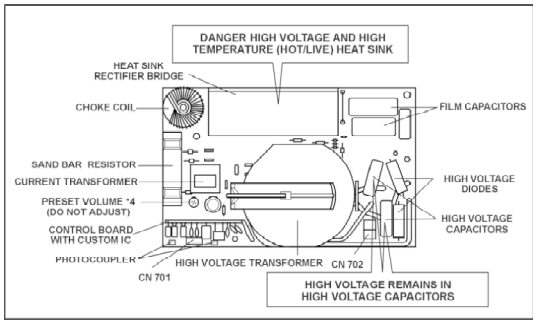
**This high voltage inverter power supply handles very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however, the current is extremely large and is therefore, dangerous due to this high current and high voltage.**

**The aluminium heat sink is also energized with high voltage (HOT), so do not touch when the AC input terminal is connected. The power devices (Collector) is directly connected to the aluminium**

**heat sink.**

**The aluminium heat sink may be (HOT) due to heat energy, therefore, extreme care should be taken during servicing.**

**Figure 1**

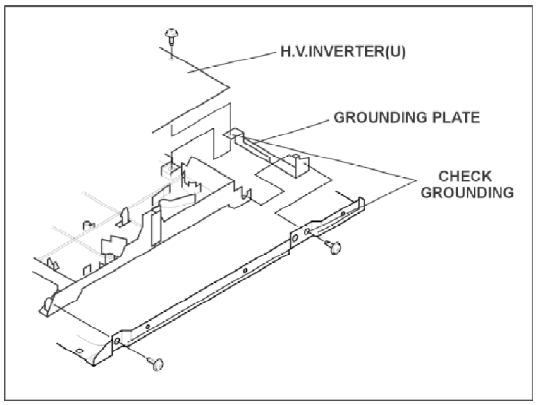



**HV Inverter warning**

## WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

**Check the high voltage inverter power supply circuit grounding. This high voltage inverter power supply circuit board must have a proper chassis ground, the inverter grounding bracket must be connected to the chassis. If the inverter board is not grounded it will expose very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.**

**Figure 2**




**Grounding of the inverter circuit board**

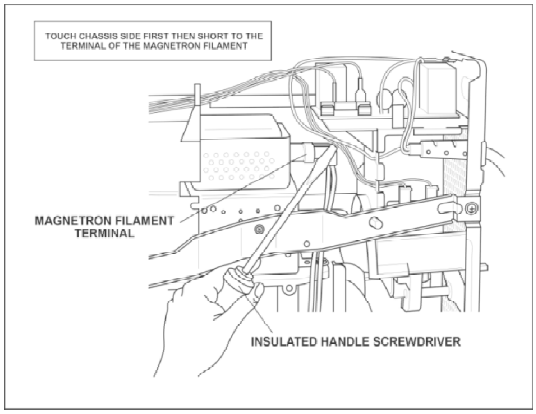
## WARNING! DISCHARGE THE HIGH VOLATGE CAPACITORS

**For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.**

**When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle**

**screwdriver to discharge. Please be sure to touch the chassis ground side first and then short to the output terminals.**

**Figure 3**


TOUCH CHASSIS SIDE FIRST THEN SHORT TO THE TERMINAL OF THE MAGNETRON FILAMENT
MAGNETRON FILAMENT TERMINAL
INSULATED HANDLE SCREWDRIVER

**Discharging the high voltage capacitors**

**WARNING**

**There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. DO NOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.**

**WARNING**

**Never touch any circuit wiring with your hand nor with an insulated tool during operation.**

## 8.3. When parts must be replaced, remove the power plug from the outlet.

## 8.4. When the 10A fuse is blown due to the operation of the short switch:

**WARNING**

**when the 10A 250V fuse is blown due to the operation of the short switch, the primary latch switch and short switch must be replaced. It is also important to change the power relay 1 (RY1) when the continuity test shows shorted contacts.**

1. **This mandatory. Refer to “adjustments and measurements” for the location of these switches.**
2. **When replacing the fuse, confirm that it has the appropriate rating for these models.**

3. When replacing faulty switches, be sure the mounting tabs are not bent, broken or deficient in their ability to hold the switches.

## 8.5. Avoid inserting nails, wire etc. through any holes in the unit during operation.

**Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.**

## 8.6. Confirm after repair

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwaves might leak if screws are not properly tightened.
2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
3. Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).

**CAUTION MICROWAVE RADIATION**

**DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY**

**IMPORTANT NOTICE**

**The following components have potentials above 250V while is appliance is operated.**

- **Magnetron**
- **High voltage transformer (Located on inverter (U))**
- **High voltage diodes (Located on inverter (U))**
- **High voltage capacitors (Located on inverter (U))**

**Pay special attention in these areas.**

**When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/ $cm_3$. After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly fixed.**

## 8.7. Sharp Edges

**Caution**

**Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to touch and cause injury if not handled with care.**

# 9. Parts Replacement Procedure

## 9.1. Magnetron

1. Discharge the high voltage capacitors on the inverter circuit.
2. Remove the screw holding the air guide
3. Remove the two screws holding the tie bar
4. Remove the oven lamp and lead wire harness cables form the air guide A.
5. Remove the air guide A
6. Disconnect the two high voltage leads from the magnetron
7. Remove the four screws holding the magnetron

**NOTE: After replacing the magnetron, tighten the mounting screws making sure that there is no gap between the waveguide and the magnetron to prevent microwave leakage.**

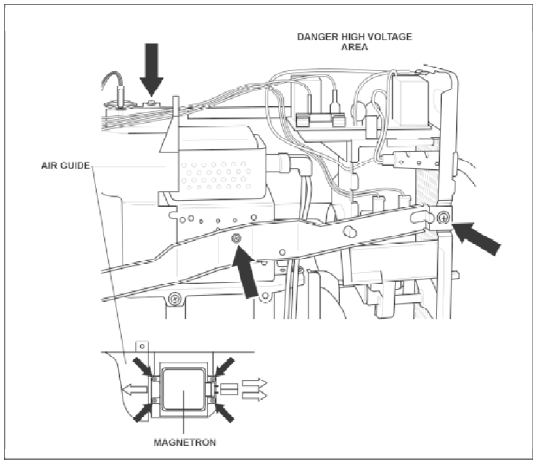
**Caution**

**When replacing the magnetron, ensure that the antenna gasket is in place.**

**Note**

**The magnetron used for this model is unique for the inverter power supply system. Make sure to use the one as listed in the parts list.**

**Figure 1**




**Removal of the magnetron**

## 9.2. Inverter power supply (U)

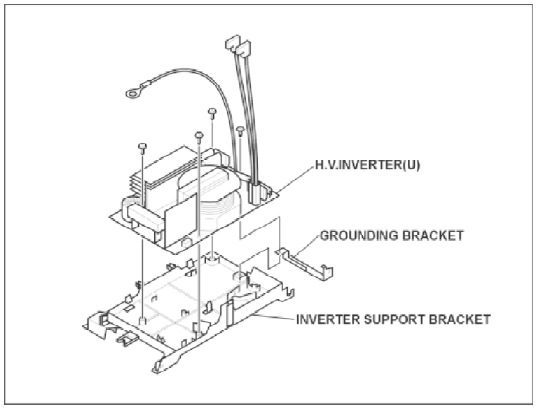
1. Discharge the high voltage capacitors
2. Remove two screws holding the tie bar.
3. Unplug the H.V. Lead wires from the magnetron

4. Remove the one screw holding the earth wire to the magnetron
5. Remove the connector CN701 and CN702 from the inverter PCB
6. Remove the two screws holding the inverter base to the chassis (See figure 2)
7. Carefully remove the inverter PCB and support base from the oven.
8. Remove the air guide E by un-clipping the catch hooks
9. Remove the four screws holding the PCB to the inverter support base.

**Caution when replacing the inverter power supply (U)**

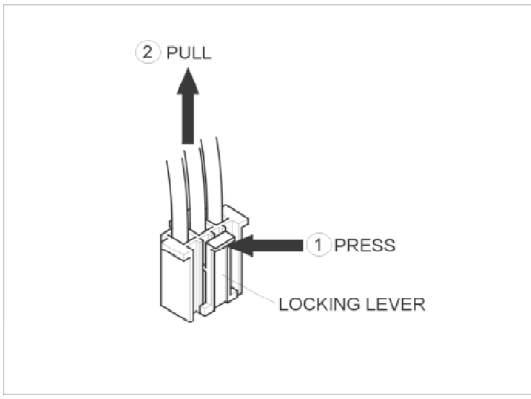
1. Make sure that grounding plate is in place
2. Securely tighten the grounding screw through the side of the chassis (Base).
3. Securely connect the 3 lead wire connectors
4. Make sure that the heat sink has enough space (gap) from the oven. Take care not to touch any lead wire to the aluminium heat sink because it is hot.

**Figure 2**




**Removal of the inverter PCB**

**Figure 3**




**Disconnecting the PCB lock connector**

## 9.3. Digital Programmer Circuit (DPC) and membrane key board.

**NOTE: Ground any static electric built up on your body before handling the DPC.**

1. **Disconnect all connectors from the DPC.**
2. **Remove the two screws holding the escutcheon base and slide the escutcheon base upward slightly. removal is easier with the door open.**
3. **Release the flat cable.**
4. **Remove the six screws holding the DPC DU assembly**
5. **Remove the door lever**
6. **Remove the seven screws holding the DPC AU assembly**

**To remove escutcheon pad**

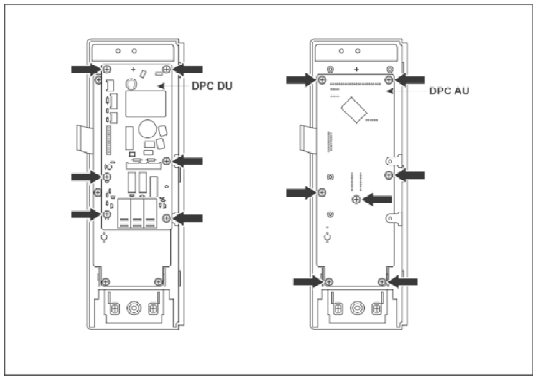
1. **Remove the escutcheon bracket from the escutcheon base by freeing the 4 catch hooks on the escutcheon base.**
2. **Peel away the display window from the inside of the base.**
3. **Remove the membrane assembly by pushing from the inside of the base and then peeling away from the outside surface.**

**NOTE:**

1. **The escutcheon key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal**
2. **When installing a new escutcheon key board, make sure that the surface of the escutcheon base is cleared sufficiently so that problems such as, shorted contacts and uneven surfaces can be avoided.**

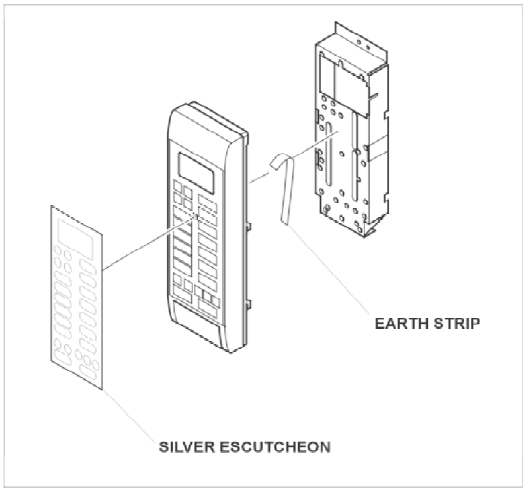
3. **When replacing the silver escutcheon sheet (NN-A720MB) ensure that the escutcheon sheet is earthed to the back-plate via the earth strip.**

**Figure 4**




**Removal of DPC AU and DPC DU**

**Figure 5**




**Grounding of the silver escutcheon**

## 9.4. Low voltage transformer and/or power relays (RY1)

**Note**

**Be sure to ground your body to discharge any static before handling the DPC.**

1. **Using a solder wick or a de soldering tool and a 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.**
2. **With all of the terminal pins cleaned and separated from the DPC contacts, remove the defective transformer/power relays and install the new components making sure that the terminal pins are inserted completely. Carefully re solder all terminal contacts**

carefully.

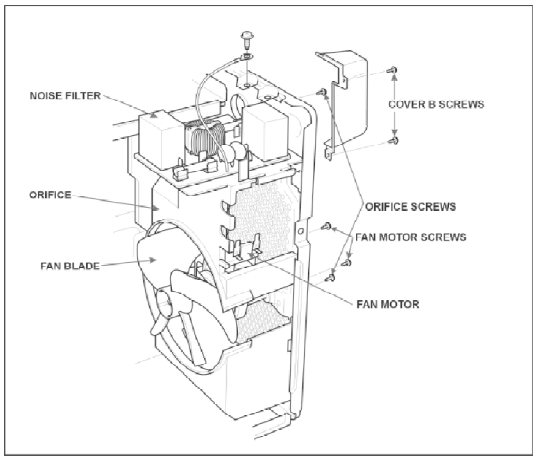
**Note**

**Do not use a soldering iron or de soldering tool of more than 30 watts on DPC contacts**

## 9.5. Fan Motor

1. Remove two screws and remove the tie bar
2. Disconnect the two lead wires from the fan motor terminals
3. Disconnect all lead wires from the noise filter
4. Remove the noise filter
5. Remove the air guide by removing the two screws
6. Remove the two screws holding the orifice assembly
7. Remove the two screws holding the fan motor assembly
8. Detach the orifice assembly and the fan motor assembly from the oven assembly.
9. Remove the fan blade from the fan motor by pulling outward.

**Figure 6**




**Removing the fan motor**

## 9.6. Door disassembly

1. Remove door C from door E by carefully pulling outward starting from the upper right hand corner using a flat blade screwdriver.
2. Remove four screws holding the door E to the door A assembly
3. Remove the door screen B by carefully un-clipping the screen from the door A catch hooks. Care must be taken not to damage

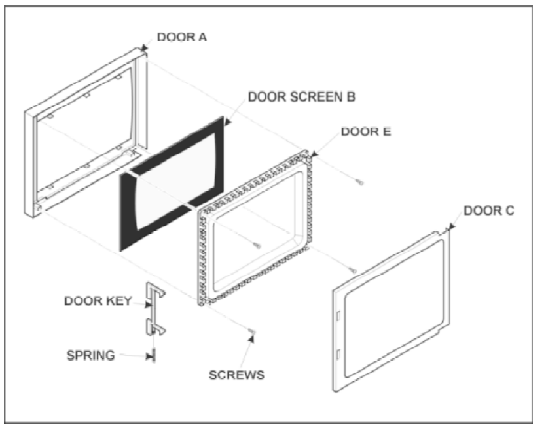
these hooks during disassembly.

4. Remove the door key and spring form the door E

**After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent excessive microwave leakage.**

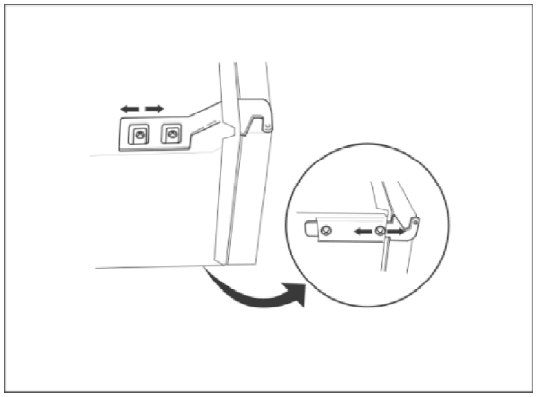
1. When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge in the direction necessary for proper alignment.
2. Adjust so that the door has no play between the inner door surface and the oven front surface. if the door assembly is not mounted properly, microwave power may leak from the clearance between the door and oven.
3. Perform the microwave leakage test.

**Figure 7**




**Disassembly of the door**

**Figure 8**



**Adjusting the door hinge**

## 9.7. Turntable Motor

1. Remove the motor cover by breaking off at the 8 spots indicated

by the arrows.

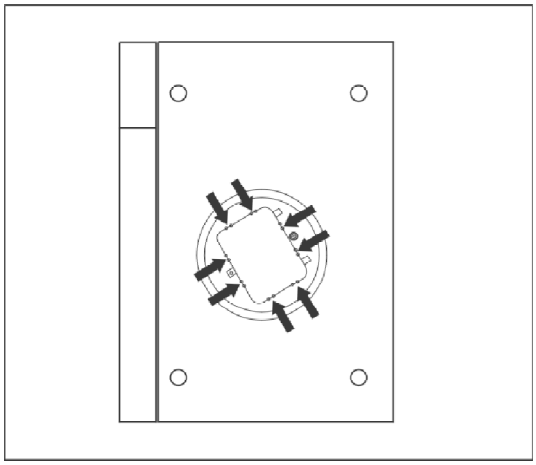
2. Disconnect the two lead wires connected to the turntable motor

3. Remove the turntable motor by removing the two screws

**Note: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bent inside so that no sharp edges are exposed.**

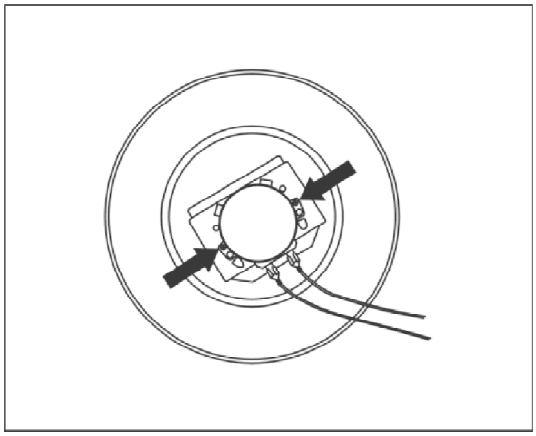
**Note: To secure the motor cover use a 4 x 6 screw.**

**Figure 9**



**Removing the turntable motor cover**

**Figure 10**



**Two screws to remove the turntable motor**

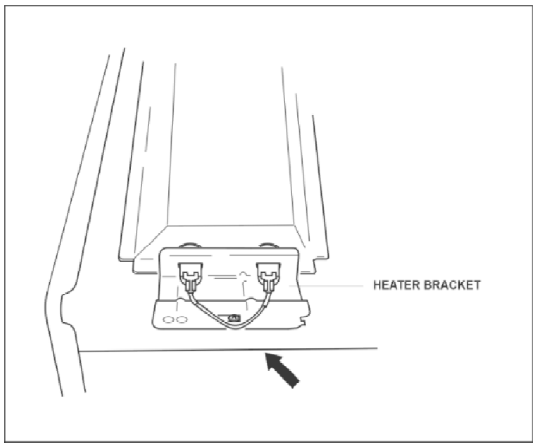
## 9.8. Quartz Heater

1. Disconnect the lead wires from the heater terminals

2. Remove one screw holding the heater supports

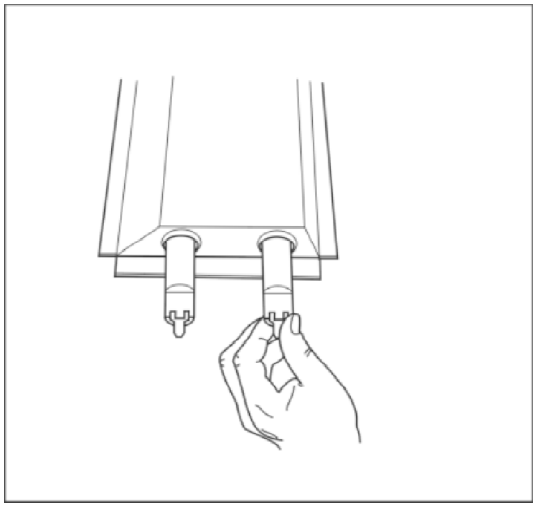
3. Remove the heater

**Figure 11**




**One screw to remove the grill bracket**

**Figure 12**



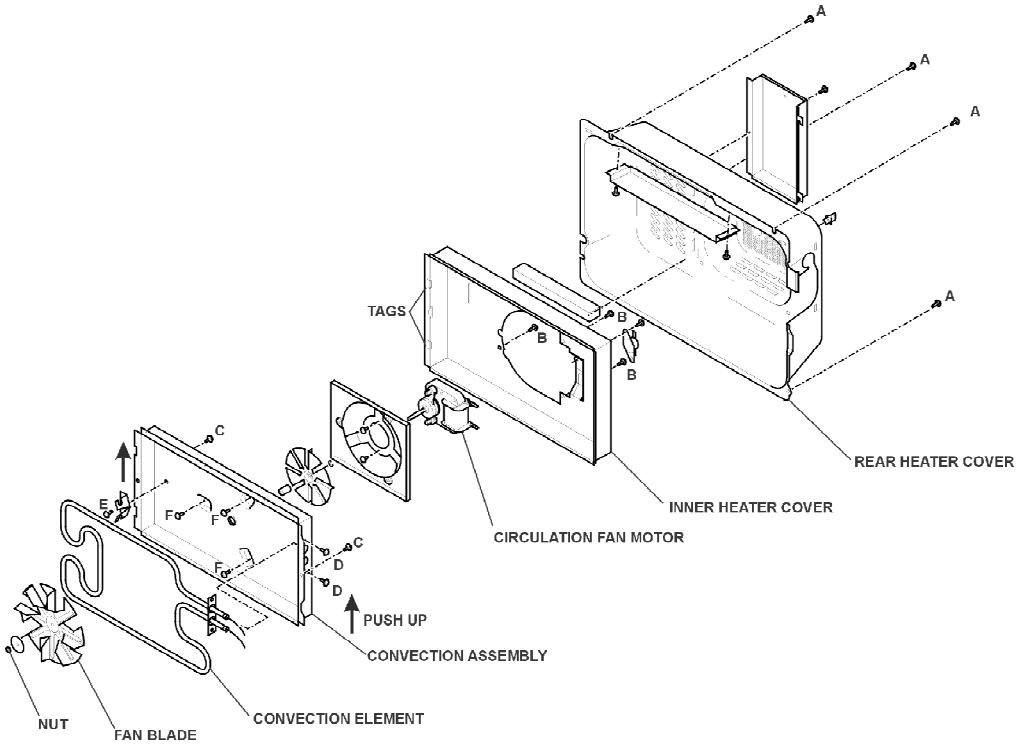
**Removing the grill element**

## 9.9. Convection Element And Circulation Fan Motor

1. **Remove the four screws A holding the rear heater cover.**
2. **Remove the wire terminals from the thermal cutout, circulation fan motor and the convection elements.**
3. **After removing the rear heater cover, remove the three screws B holding the inner heater cover.**
4. **Un clip the metal tags to remove the inner heater cover.**
5. **Remove the two screws C holding the convection assembly, push upwards to remove.**
6. **To remove the convection element remove the one screw E on the convection bracket A and 2 screws D on convection bracket B**
7. **Release the circulation fan nut to remove the circulation fan blade.**

**8. Remove the three screws F to release the circulation fan motor assembly.**

**Figure 13**




**Disassembly of the rear convection assembly**

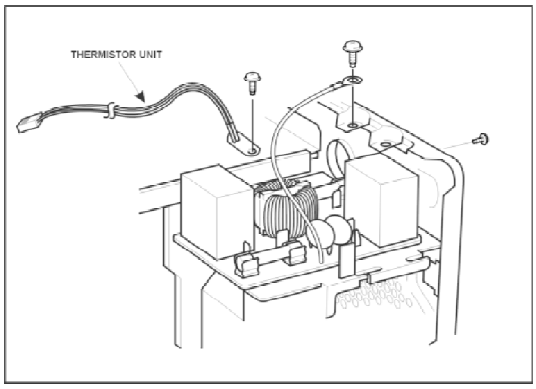
## 9.10. Temperature Sensor

**1. Remove lead wire plug from connector CN7**

**2. Remove 1 screw holding temperature sensor**

**3. Replace temperature sensor and lead wire as a complete unit.**

**Figure 14**




**Removing the temperature sensor unit**

# 10. Component Test Procedure

**Caution**

1. High voltage is present at the high voltage terminal of the inverter unit, including the aluminium heat sink.
2. It is not necessary or advisable to attempt to measure this high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

## 10.1. Primary Latch Switch, Secondary Latch Switch and power relay B interlocks.

1. Unplug the lead connectors to power relay B and verify the continuity of the power relay B 1-2 terminals.
2. Unplug the lead connectors to the primary latch switch and secondary latch switch.
3. Test the continuity of the switches with the door open and closed with an ohm meter on the lowest scale.
   Normal continuity readings should be as followed.

| | Door Open | Door Closed |
|---|---|---|
| Primary Latch Switch | infinite Ω (Open) | 0 Ω (Close) |
| Secondary Latch switch | infinite Ω (Open) | 0 Ω (Close) |
| Power relay B | infinite Ω (Open) | infinite Ω (Close) |

## 10.2. Short Switch and Monitor Circuit

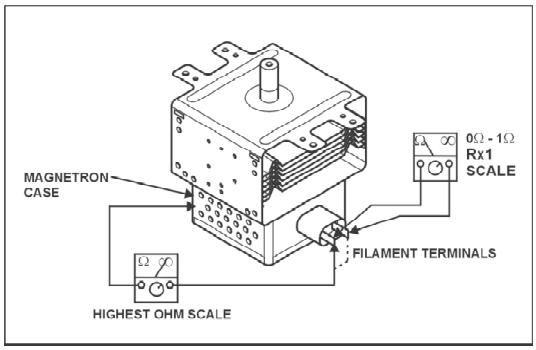
1. Unplug the lead wires from the HV inverter primary terminals.
2. Connect the test probes of the ohm meter to these leads
3. Test the continuity of the short switch with the door open and the door closed using the lowest ohm scale.

| | Door Open | Door Closed |
|---|---|---|
| Monitor switch | 0 Ω | infinte Ω |

## 10.3. Magnetron

**Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron.**

1. **Isolate the magnetron from the circuit by disconnecting the HV leads**
2. **A continuity check across the magnetron filament terminals should indicate one ohm or less**
3. **A continuity check between each filament terminal and the magnetron case should read open.**




## 10.4. Push Button Keyboard

**Check the continuity between the switch terminals, by tapping an appropriate pad on the keyboard. The keypad matrix is shown on Key Board Matrix.**

## 10.5. Inverter Power Supply

**Caution**

**DO NOT try to repair this inverter power supply). Replace as a whole H.V. Inverter Unit.**

**Inverter Power Supply Diagram**

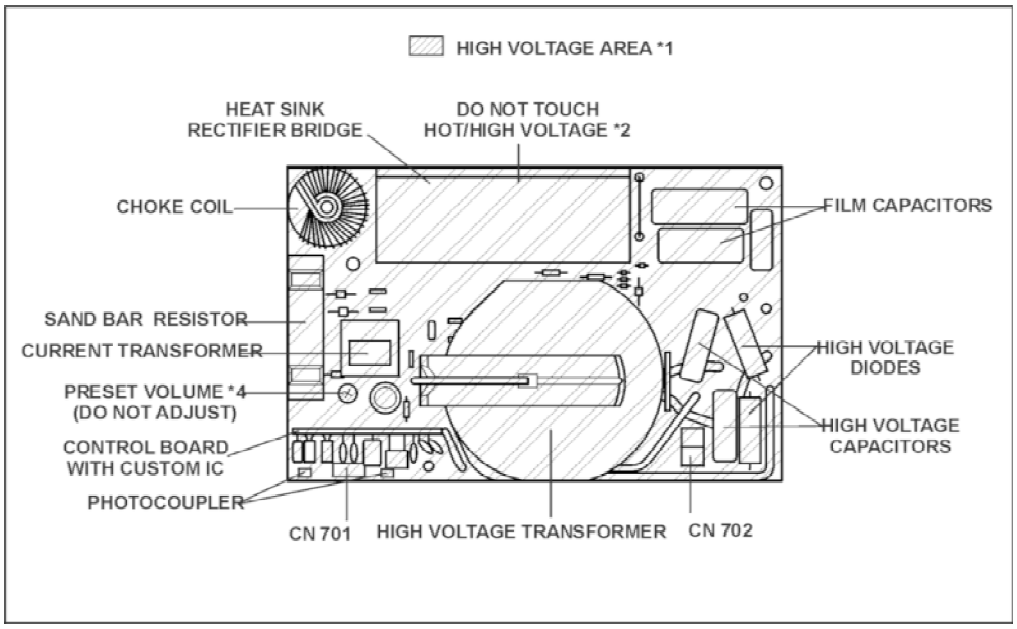



**Figure 3**

## 10.6. Inverter Power Supply Unit

**Warning**

**Do not attempt to make any measurements in the high voltage circuitry of the inverter or magnetron.**

**See troubleshooting of the inverter circuit and magnetron on Figure 4 to determine if the inverter power supply is still functioning.**

## 10.7. Temperature Sensor

**A temperature sensor is mounted on the oven cavity on the right hand side. The resistance reading across the thermistor should read 300K ohm within a temperature range of 10 to 30 degrees centigrade. This would be the temperature range within a kitchen environment. If the resistance measured is outside this range the thermistor is defective and should be replaced.**
**NOTE: When measuring the resistance of the thermistor disconnect the connector from the digital programmer circuit.**
**NOTE: If the microwave oven has been operated allow to cool to room temperature before attempting to measure the thermistor resistance.**

# 11. Measurements and Adjustments

**Warning**

**- For continued protection against radiation hazard, replace only with identical parts.**
**- When the 10 amp fuse is blown due to the operation of the short switch, you must replace the primary latch switch and short switch. Then follow the installation procedures below.**
**- Interlock switch replacement - In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their**

ability to hold the switches.

- Refer to the schematic and wiring diagram to ensure proper connection

## 11.1. Installation of primary latch switch, secondary latch switch and short switch.

1. When mounting the primary latch switch, secondary latch switch and short switch to the door hook assembly. Follow the instructions in figure 1.
   NOTE: No specific adjustment during the insulation of each switch into the door hook is necessary.
2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrow in figure 1. Ensuring the door does not have any play in it. Check for play by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
3. Reconnect the short switch, primary switch and secondary latch switches and check the continuity of the monitor circuit and latch switches by following the component test procedures on page.

## 11.2. Measurement of microwave output

**The output power of the magnetron can be determined by performing the IEC standard test. However, due to the complexity of the IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.**

**Necessary equipment:**

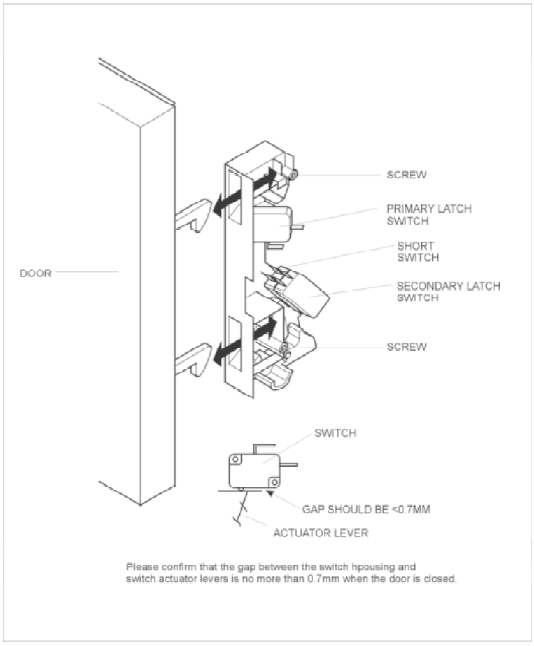
- 1 liter beaker
- Glass thermometer
- Wrist watch or stop watch

**NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.**

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beakers temperature (Recorded as T1)
2. Place the beaker on the center of the glass cook plate.
3. Stir the water again and read the temperature of the beaker (Recorded as T2)

4. **The normal temperature rise at the high power position for each model is shown in the table. (Figure 2)**

**Figure 1**


SCREW
PRIMARY LATCH SWITCH
SHORT SWITCH
SECONDARY LATCH SWITCH
SCREW
DOOR
SWITCH
GAP SHOULD BE <0.7MM
ACTUATOR LEVER
Please confirm that the gap between the switch hpousing and switch actuator levers is no more than 0.7mm when the door is closed.

**Adjustment of latch switch assembly**

| RATED OUTPUT | TEMPERATURE RISE |
|---|---|
| 1000W | 8°C |

# 12. Troubleshooting guide

**Caution**

1. **Do not try to repair this H.V. Inverter power supply. Replace as a whole unit. When returning the inverter unit pack in the original inverter box.**
2. **Do not adjust the preset volume on the H.V. Inverter. It is very dangerous to repair or adjust without sufficient test equiptment, this circuit handles very high volatge and current**
3. **Ensure a good ground connection before beginning any troubleshooting**
4. **Be careful of the high voltage circuit and take necessary precautions when troubleshooting**
5. **Discharge the high voltage capacitors on the inverter.**

6. **When checking the continuity of the switches on the H.V. inverter, disconnect one lead wire from these parts and then check the continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector and not the lead wire, otherwise the lead wire may become open circuit.**
7. **Do not touch any parts of the circuitry on the digital programmer cicruit, since static electric discharge may damage this control panel.**
   **Whilst working on this board ensure that that your body is connected to ground to discharge any static charge.**
8. **240 VAC is present on the digital programmer circuit. (Terminals of the power relays and the primary circuit of the low voltage transformer). When troubleshooting, be cautious of possible electric shock.**

**Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the ovens malfunction.**

**Figure 1**

| | SYMPTOMS | CAUSE | CORRECTIONS |
|---|---|---|---|
| 1. | Oven is dead.<br>Fuse is OK.<br>No display and no operation at all. | 1. Open or loose lead wire harness.<br>2. Open low voltage transformer<br>3. Defective DPC AU or DPC DU | |
| 2. | Oven does not accept key input (Program). | 1. Key input is not in sequence.<br>2. Shorted push button on DPC AU.<br>3. Defective DPC AU. | Refer to operation procedure.<br><br>Refer to DPC troubleshooting. |
| 3. | Oven lamp and turntable motor turn on when oven is plugged in with door closed | 1. Misadjustment or loose wiring of secondary latch switch.<br>2. Defective secondary latch switch | Adjust door and latch switches. |
| 4. | Timer starts countdown but no microwave oscillation.<br>(No heat while oven lamp and fan motor turn on) | 1. Off-alignment of latch switches.<br>2. Open or loose connection of high voltage circuit especially magnetron filament circuit<br>NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to have lower output and/or be intermittent.<br>3. Defective high voltage component<br>H.V. Inverter [NEW H.V.] Magnetron<br>4. Open or loose wiring of power relay (RY1)<br>5. Defective primary latch switch.<br>6. Defective power relay RY1 or DPC AU or DU. | Adjust door and latch switches.<br><br>Check high voltage component according to component test procedure and replace if it is defective.<br><br>Refer to DPC troubleshooting. |
| 5 | No operation of grill or convection elements | 1. Open thermal cut-out SW1<br>2. Defective convection or grill element<br>3. Defective power relay (RY5) (RY4).<br>4. Defective DPC | |

**Troubleshooting (No Operation)**

**Figure 2**

| | SYMPTOMS | CAUSE | CORRECTIONS |
|---|---|---|---|
| 1. | No display and no operation at all.<br>10A Fuse is blown. | 1. Shorted lead wire harness<br>2. Defective primary latch switch (NOTE 1)<br>3. Defective short switch (NOTE 1)<br>4. Defective Inverter power supply<br>(U) NEW H.V.<br>Refer to component test procedure | Check adjustment of primary, secondary latch switch and short switch including door. |
| | | NOTE 1: All of these switches must be replaced at the same time.<br>(Refer to adjustment instructions.)<br>Check continuity of power relay B's contacts (between 1 and 2) and if it has continuity, replace power relay B also. | |
| 2 | 16A fuse is blown | 1. Shorted lead wire harness<br>2. Short convection element<br>3. Shorted grill element | |

## Troubleshooting (Fuse is blown)

## Figure 3

| | SYMPTOMS | CAUSE | CORRECTIONS |
|---|---|---|---|
| 1 | Microwave output is low.<br>Oven takes longer time to cook food. | 1. Decrease in power source voltage<br>2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation)<br>3. Aging change of magnetron. | Consult electrician<br>Refer to output test procedures by water temperature raising test. |
| 2 | Turntable on when door is opened. | 1. Shorted primary latch switch. | |
| 3 | Loud buzzing noise can be heard. | 1. Loose fan and fan motor | |
| 4 | Turntable motor does not rotate. | 1. Open or loose wiring of turntable motor<br>2. Defective turntable motor | |
| 5 | Oven stops operation during cooking. | 1. Open or loose wiring of primary and secondary latch switch<br>2. Operation of thermal cut-out | Adjust door and latch switches. |
| 6 | Oven returns to plug in mode 1 minute after start pad is pressed. | 1. Open thermistor cicuit<br>2. Defective thermistor | |

## Troubleshooting (Other problems)

## Figure 4

**Troubleshooting of Inverter Circuit (U) and Magnetron** NEW H.V.

**Oven shuts down after approximately 15 or 33 seconds.**

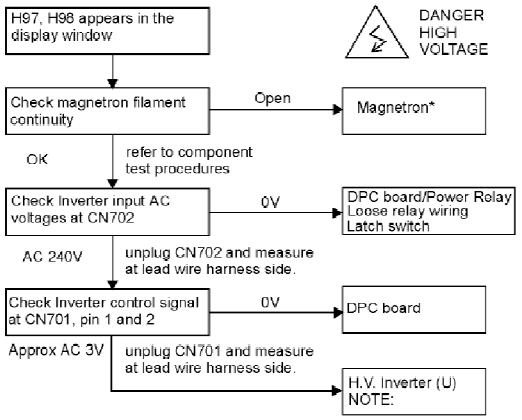
If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to activate the self diagnostic failure code system.

SELF TEST MODE

When oven is set in test mode place water load in oven, set micropower to high and time to 1 minute, press start.

H97, H98 appears in display window a short time after start key is pressed and there is no microwave oscillation.


H97, H98 appears in the display window
DANGER HIGH VOLTAGE
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
Check Inverter input AC voltages at CN702
0V
DPC board/Power Relay Loose relay wiring Latch switch
AC 240V
unplug CN702 and measure at lead wire harness side.
Check Inverter control signal at CN701, pin 1 and 2
0V
DPC board
Approx AC 3V
unplug CN701 and measure at lead wire harness side.
H.V. Inverter (U) NOTE:

NOTE: DO NOT try to REPAIR this Inverter Power Supply(U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

*Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

## Troubleshooting Inverter by Input out voltage

**Figure 5**

**Alternative way to troubleshooting oven with AC Ampare meter used.** **NEW H.V.**

**Oven shuts down after approximately 15 or 33 seconds.**

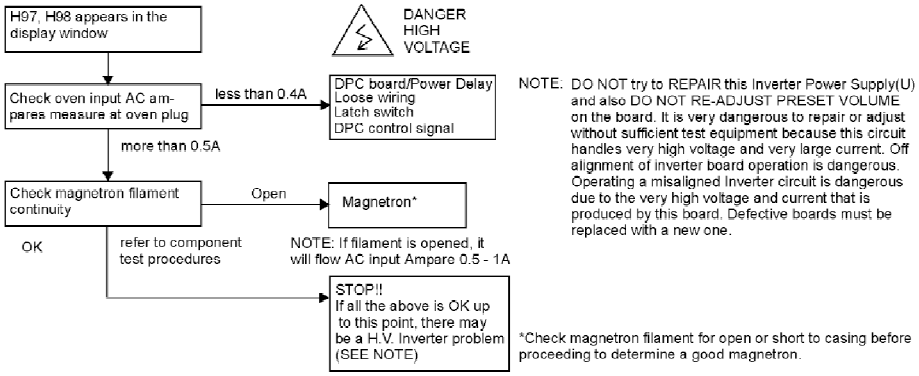
If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to activate the self diagnostic failure code system.

SELF TEST MODE

When oven is set in test mode place water load in oven, set micropower to high and time to 1 minute, press start.

H97, H98 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampare meter used for troubleshooting.


H97, H98 appears in the display window
DANGER HIGH VOLTAGE
Check oven input AC amperes measure at oven plug
less than 0.4A
DPC board/Power Delay
Loose wiring
Latch switch
DPC control signal
more than 0.5A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, it will flow AC input Ampare 0.5 - 1A
STOP!!
If all the above is OK up to this point, there may be a H.V. Inverter problem (SEE NOTE)
NOTE: DO NOT try to REPAIR this Inverter Power Supply(U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.
*Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

**Troubleshooting Inverter by Microwave Oven Input Current**

# 13. Digital Programmer Circuit Troubleshooting Guide

**Trouble Related to Digital Programmer Circuit**

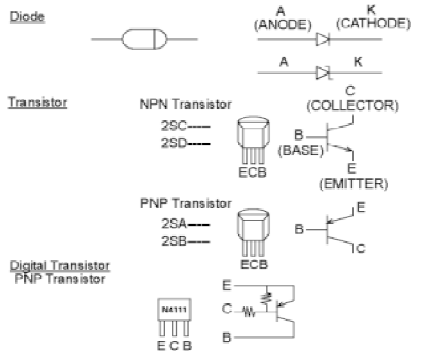
| SYMPTOM | STEP | CHECK | RESULT | CAUSE/CORRECTIONS |
|---|---|---|---|---|
| No display when oven is first plugged in. | 1 | Fuse pattern of DPC | Normal | STEP 2 |
| | | | Open (NOTE) | Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC |
| Oven is dead. | 2 | IC10 Pin 9 (12V line) | Abnormal 0V | IC10 |
| | | | Normal 12V | → Step 3 |
| | 3 | IC-1 Pin 8 voltage (Emitter of Q10) | Abnormal | ZD10, Q10, Ribbon Cable |
| | | | Normal = 5V | → Step 4 |
| | 4 | IC-1 pin 27 voltage (15 pin of IC220) | Abnormal | IC-220 |
| | | | Normal | → IC-1, CX1 |

NOTE
Procedure of fuse pattern repairing is as follows:
1. When the fuse pattern (PF2) opens.
(1) Remove the jumper wire (PF3).
(2) Insert the removed jumper wire (PF3) to "(PF2)" position and solder it. If both "PF2" and "PF3" fuse patterns are open, please replace DPC.
NOTE: * At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

| SYMPTOM | STEP | CHECK | RESULT | CAUSE/CORRECTIONS |
|---|---|---|---|---|
| No key input | 1 | Push button switch | Abnormal | Push button switch |
| | | | Normal | IC-1 |
| No beep sound | 1 | IC-1 pin 12, voltage | Abnormal | IC-1 |
| | | | Normal | IC220, BZ310 |
| Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped. | 1 | IC-1 pin 23voltage while operation | Abnormal | IC-1 |
| | | | Normal = 5V | → Step 2 |
| | 2 | Short circuit between pin 6 and pin 16 of IC-2 | Still not turn on | RY-2 |
| | | | RY-2 turns on | IC-220 |
| No microwave oscillation at any power setting. | 1 | IC-1 pin 18 and 16 voltages while operation at high power | Abnormal | IC-1 |
| | | | Normal 7---5V, 72---5V | → Step 2 |
| | 2 | Q221 transistor | Abnormal | Q221 |
| | | | Normal | IC220, Q226, RY1 |
| No Grill Operation at any power setting. | 1 | IC-1 pin 18 and 15 voltages while operation at high power | Abnormal | IC-1 |
| | | | Normal 7---5V, 72---5V | → Step 2 |
| | 2 | Q222 transistor | Abnormal | Q222 |
| | | | Normal | IC220, Q226, RY4 |
| No convection operation at any power setting. | 1 | IC-1 pin 18 and 17 voltages while operation at high power | Abnormal | IC-1 |
| | | | Normal 7---5V, 72---5V | → Step 2 |
| | 2 | Q223 transistor | Abnormal | Q223 |
| | | | Normal | IC220, Q226, RY5 |
| Dark or unclear display | 1 | Replace display and check operation | Normal | DISPLAY |
| | | | Abnormal | IC-1 |
| Missing or lighting of unnecessary segment | 1 | Replace IC-1 and check operation | Normal | IC-1 |
| | | | Abnormal | DISPLAY |
| Oven shuts down on Micropower after a short time (set in test mode) (set high power 1 Min) H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW H.V. | 1 | Unplug CN702(2 pin) connector and measure voltage between terminals | 0V | 1. Latch switch 2. DPC/Power relay |
| | | | AC line voltage of 240V | → Step 2 |
| | 2 | Unplug CN701(3 pin) connector and measure pin 1 voltage | 0V | 1. DPC |
| | | | Approx. AV 3V | 1. Magnetron 2. Inverter |

**Figure 2**

**How to Check the Semiconductors Using an OHM Meter**




| | FORWARD | REVERSE |
|---|---|---|
| A-K | SMALL | ∞ |

| | FORWARD | REVERSE |
|---|---|---|
| B-E | SMALL | ∞ |
| B-C | SMALL | ∞ |
| C-E | ∞ | ∞ |

| | FORWARD | REVERSE |
|---|---|---|
| E-B | SMALL | ∞ |
| C-B | SMALL | ∞ |
| C-E | ∞ | ∞ |

| | FORWARD | REVERSE |
|---|---|---|
| E-B | 10kΩ~30kΩ | 10kΩ~30kΩ |
| C-B | 50kΩ~90kΩ | ∞ |
| C-E | 40kΩ~80kΩ | ∞ |

**How to test the semiconductors**

# 14. Main Parts List

1. Part numbers are indicated on most mechanical parts. Please use these part numbers for part orders. Do not use the description of the part.

**Important safety notice**

1. Components identified by! mark have special characteristics important for safety. When replacing any of these components, use only the manufacturers specified parts.

| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| | | | | |
| 1 | XTWANE 4 + 8BN | Screw | 1 | |
| 2 | E41194V00BP | Exhaust Guide D | 1 | |
| 3 | E6061002 | Strike | 1 | |
| 4 | XTWANE 4+8BN | Screw | 1 | |
| 5 | E10584V00BP | Back Plate Cover A | 1 | NN-A750WB<br>NN-A720MB |
| 5 | E10584V00SBP | Back Plate Cover A | 1 | NN-A770SB |
| 6 | E41074V00BP | Exhaust Guide B | 1 | |
| 7 | ANE0964000BK | Cushion Rubber | 1 | |
| 8 | E61454V00BP | Thermal Cut-Out | 1 | |
| 9 | XTWANE 4+8BN | Screws | 3 | |
| 10 | E66804V00BP | Heater Cover B | 1 | |
| 11 | E22424V00BP | Adiabatic Material A | 1 | |
| 12 | E490S4V00BP | Circulation Fan Motor | 1 | |
| 13 | E41804V00BP | Motor Bracket | 1 | |
| 14 | XTBANE 4+8BN | Screws | 3 | |
| 15 | E41594V00BP | Cooling Fan | 1 | |
| 16 | E41614V00BP | Fan Spacer A | 1 | |
| 17 | XTWANE 4+8BN | Screws | 3 | |
| 18 | XTBANE 4 + 8BN | Screws | 2 | |
| 19 | E66794V00BP | Heater Cover A | 1 | |
| 20 | E630H4V00BP | Heater Unit | 1 | |
| 21 | E22394V00BP | Circulation Fan | 1 | |
| 22 | E41634V00BP | Fan Spacer C | 1 | |
| 23 | XNG4EVSL | Nut | 1 | |
| 24 | E64174V00BP | Heater Bracket A | 1 | |
| 25 | XTWANE 4 + 8BN | Screw | 1 | |
| 26 | E00064080BP | Warning Label | 1 | |
| 27 | E10594V00BP | Back Plate Cover B | 1 | |
| 28 | XTWANE 4+8BN | Screws | 2 | |
| 29 | E22594V00BP | Adiabatic Material D | 1 | |
| 30 | E030A4V00BP | Lead Wire Harness | 1 | |
| 31 | E67597550GP | 10A Fuse | 1 | |
| 32 | AEE6230P10GN | 16A Fuse | 1 | |
| 33 | E607X4N30BP | Noise Filter | 1 | |
| 34 | E400A4760JP | Fan Motor | 1 | |
| 35 | E41444N30BP | Upper Orifice | 1 | |
| 36 | E42094N30BP | Lower Orifice | 1 | |
| 37 | E4008-1640 | Fan Blade | 1 | |
| 38 | E09020000AF | Cushion Rubber | 1 | |

| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| 39 | E09020000AA | Cushion Rubber | 1 | |
| 40 | E20994N30BP | Reinforcement Bracket A | 1 | |
| 41 | E40474N30BP | Air Guide A | 1 | |
| 42 | E610T6700BP | Lamp Assembly | 1 | |
| 43 | E22364V00BP | Right Hand Heater Panel | 1 | |
| 44 | XTW4 +12T | Screw | 1 | |
| 45 | E31374830AP | Hook Spacer B | 1 | |
| 46 | E31384830AP | Hook Spacer C | 1 | |
| 47 | E61425180AP | Secondary Latch Switch | 1 | L-3C2-2 |
| 48 | E61785180AP | Short Switch | 1 | L-2C2-2 |
| 49 | AEE6142-1450 | Primary Latch Switch | 1 | V-16G-3C26-M |
| 50 | E30208000BP | Door Hook | 1 | |
| 51 | AEE9108820GN | Holder | 1 | |
| 52 | XTWANE 4+ 12B | Screws | 4 | For Magnetron |
| 53 | 2M236-M42G | Magnetron | 1 | |
| 54 | E22434V00BP | Adiabatic Material | 1 | |
| 55 | XTWANE 4 + 8BN | Screw | 1 | |
| 56 | AEE0926000AN | Cushion Rubber | 1 | |
| 57 | E66014V00BP | Inverter Earth Bracket | 1 | |
| 58 | E65854V00BP | Inverter Support Bracket | 1 | |
| 59 | E606Y4V00GP | Inverter | 1 | |
| 60 | E09250000BD | Cushion Rubber | 1 | |
| 61 | E40474V00BP | Air Guide E | 1 | |
| 62 | E09020000AL | Cushion Rubber | 1 | |
| 63 | E10014N30BP | Base Plate | 1 | |
| 64 | E09270000AH | Cushion Rubber | 1 | |
| 65 | E09270000AM | Cushion Rubber | 1 | |
| 66 | E1008-1180 | Rubber Foot | 4 | |
| 67 | E09270000AM | Cushion Rubber | 1 | |
| 68 | XTWA 4+12CF | Screws | 6 | |
| 69 | E110D4V00HBP | Outer Panel | 1 | NN-A750WB |
| 69 | E110D4V00NBP | Outer panel | | NN-A720MB |
| 69 | E110D4V00SBP | Outer Panel | | NN-A770SB |
| 70 | XTW 3+6B | Screws | 2 | |
| 71 | E63268960JP | Turntable Motor | 1 | |
| 72 | E01507550BP | Outer Panel Warning Label | 1 | NN-A750WB |
| 72 | E01504V00SBP | Outer Panel Warning Label | 1 | NN-A770SB |
| 72 | E01507560BP | Outer Panel Warning Label | 1 | NN-A720MB<br>NN-A770SB |
| 73 | XTWA 4 + 12CF | Screw | 1 | |
| 74 | XTWA 4 + 12DF | Screw | 1 | |
| 75 | E30074L00GS | Lower Hinge | 1 | |
| 76 | E21778000BP | Pulley Shaft Washer | 1 | |
| 77 | E21315870GP | Pulley Shaft | 1 | |
| 78 | XST4 + W5V | Screw | 1 | |
| 79 | E20554L00GS | Cover A | 1 | |
| 80 | E30064N30BP | Upper Hinge | 1 | |
| 81 | XTWA 4+12CF | Screws | 2 | |
| 82 | E200A4V00BP | Oven cavity | 1 | |
| 83 | E64604N30BP | Heater Support Bracket | 1 | |
| 84 | E64604N30BP | Heater Support Bracket | 1 | |
| 85 | E03594N30GP | Lead Wire Grill Link | 1 | |
| 86 | XTWANE4 + 8BN | Screw | 1 | |
| 87 | E630G8000BP | Quartz Heater | 2 | |

| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| 88 | E40244V00BP | Exhaust Guide A | 1 | |
| 89 | XTWANE 4+8BN | Screw | 1 | |
| 90 | E09230000AL | Cushion Rubber | 1 | |
| 91 | XTWANE 4+8BN | Screw | 1 | |
| 92 | E605A-1960 | Temperature Sensor | 1 | |
| 93 | E900C6520BP | Power cord | 1 | |
| 94 | E030E4N30BP | H.V Lead Wire | 1 | |
| 95 | E90314V00BP | Holder | 1 | |
| 96 | E90314VOOBP | Holder | 1 | |
| 97 | E67579000BP | Heater bracket D | 1 | |
| 98 | E203B4V00SBP | Heater Cover | 1 | NN-A770SB |
| 99 | E01504V00SBP | Warning label | 1 | NN-A770SB |

# 15. Exploded View

# 16. Door Assembly

| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| | | | | |
| D1 | E302A4V00SBP | Door A Assembly | 1 | NN-A770SB |
| D2 | E30014V00HBP | Door A | 1 | NN-A750WB |
| D2 | E30014V00NBP | Door A | 1 | NN-A720WB |
| D3 | E30214000AP | Door Key Spring | 1 | |
| D4 | E30184L00GS | Door Key | 1 | |
| D5 | E31464V00BP | Door Screen B | 1 | |
| D6 | E302K4V00BP | Door E | 1 | |
| D7 | E30854V00BP | Door Screen C | 1 | |

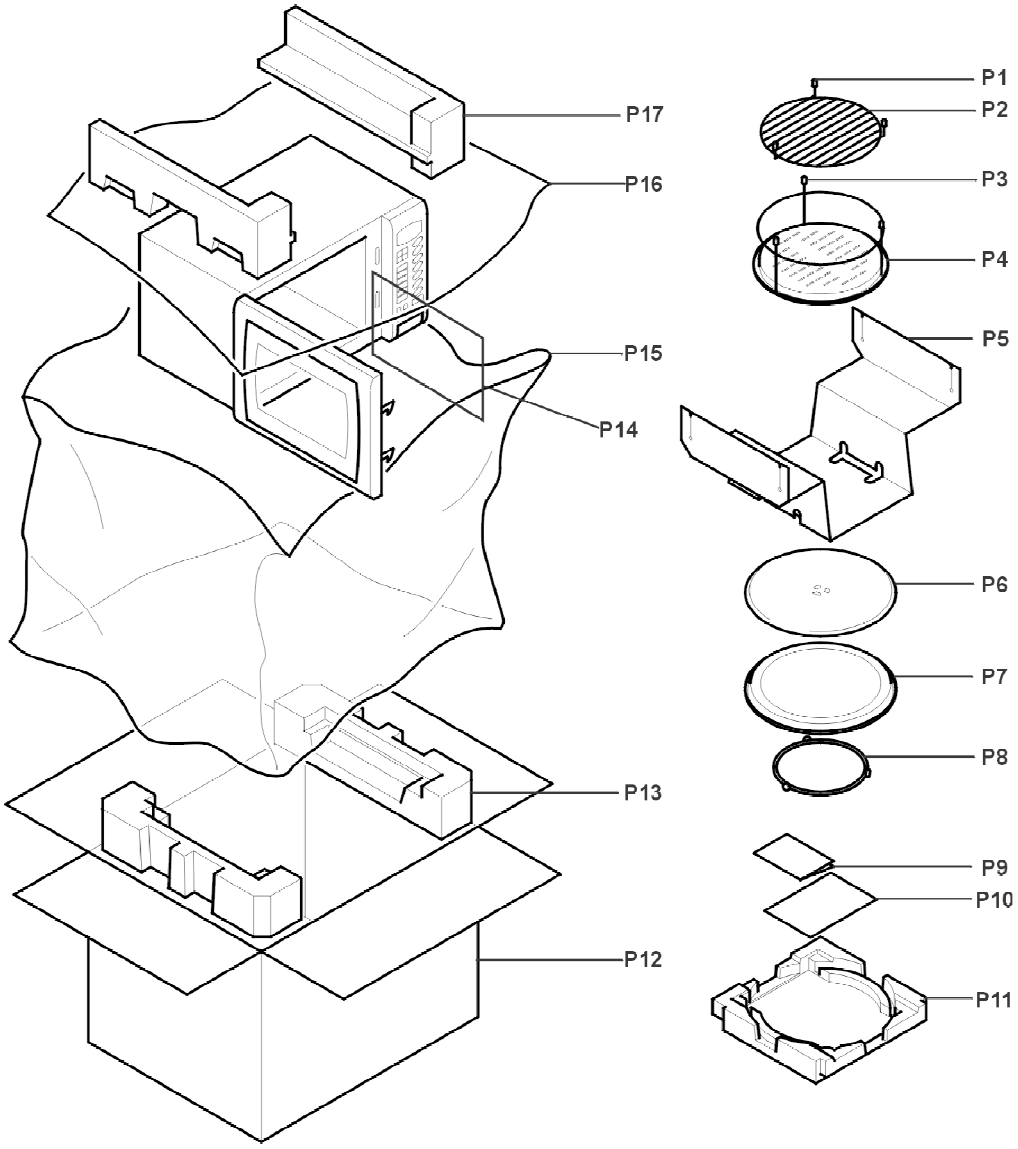
**NOTE: When ordering any Door component also order door C as this part may become damaged during disassembly.**

# 17. Escutcheon Base

| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| | | | | |
| E1 | E800S4V00SBP | Escutcheon Assembly | 1 | ! NN-A770SB |
| E2 | E80074L00SGS | Spring | 1 | NN-A770SB |
| E3 | E80724L10HBP | Door opening button | 1 | NN-A750WB |
| E3 | E80724L10NBP | Door opening button | 1 | NN-A720MB |
| E3 | E80724V00SBP | Door opening button | 1 | NN-A770SB |
| E4 | E80378A0AG | Door button spring | 1 | NN-A770SB |
| E5 | E83374V00HBP | Escutcheon sheet | 1 | NN-A750WB |
| E5 | E83374V00NBP | Escutcheon sheet | 1 | NN-A720MB |
| E6 | E80344L10HBP | Escutcheon Base | 1 | NN-A750WB |
| E6 | E80344L10NBP | Escutcheon Base | 1 | NN-A720MB |
| E7 | E90014N30BP | Earth Strip | 1 | NN-A720MB |
| E8 | E81274L10BP | Back plate | 1 | NN-A750WB<br>NN-A720MB |
| E8 | E81274V00SBP | Back plate | 1 | NN-A770SB |
| E9 | E603L4V00BP | DPC AU | 1 | ! |
| E10 | E66164L00GS | Ribbon cable | 1 | |
| E11 | E82564L10BP | Door opening lever | 1 | NN-A750WB<br>NN-A720MB |
| E11 | E82564V00SBP | Door opening lever | 1 | NN-A770SB |
| E12 | E603Y4V00BP | DPC DU | 1 | ! |
| E13 | E607044V00SBP | Insulation sheet | 1 | NN-A770SB |
| E14 | E83264V20BP | Display sheet | 1 | |
| E15 | E00074V00BP | Name plate | 1 | |

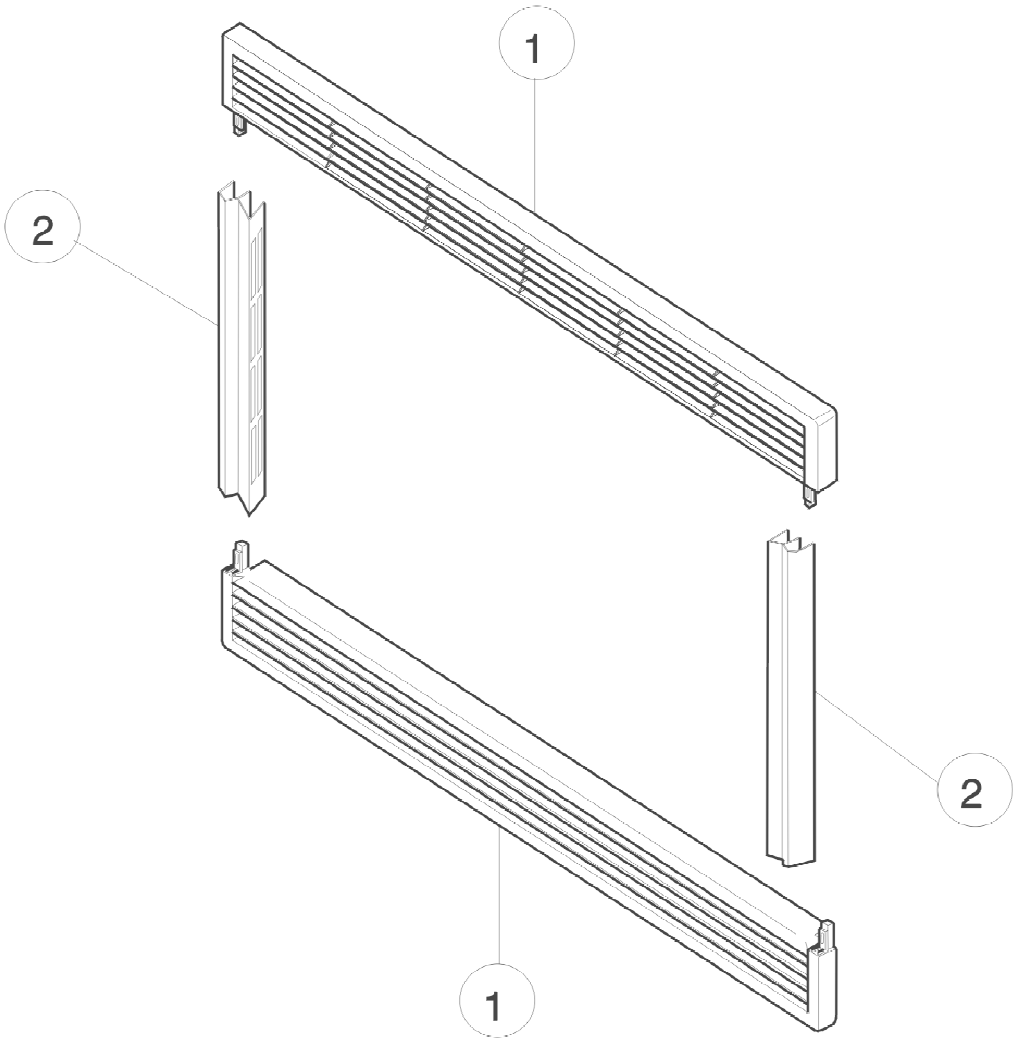
**NOTE: Please order the escutcheon base and name plate together**
**NOTE: When replacing the silver escutcheon sheet ensure it is earthed to the escutcheon back plate via the earth strip**
**NOTE: When replacing the stainless escutcheon assembly, be sure that the fascia is earthed to the back plate via the earth spring.**

# 18. Packing And Accessories


P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P16
P17

| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| | | | | |
| P1 | E06435870GS | Rubber foot | 3 | RED |
| P2 | E060V8020BP | Wire rack low | 1 | |
| P3 | E06435870SP | Rubber foot | 3 | BLACK |
| P4 | E060V6520BP | Wire rack high | 1 | |
| P5 | E01084V00BP | Tray packing | 1 | |
| P6 | E06014N30BP | Glass tray | 1 | |
| P7 | E06015020GP | Enamel tray | 1 | |
| P8 | E290D4N00BP | Roller ring | 1 | |
| P9 | E01695750BP | Service center list | 1 | |
| P10 | E00034V00BP | Operating instructions and cook book | 1 | |
| P11 | E01134N30BP | Tray styrol | 1 | |
| P12 | E01024V00HBP | Carton box | 1 | NN-A750WB |
| P12 | E01024V00NBP | Carton box | 1 | NN-A720MB |
| P12 | E01024V00SBP | Carton box | 1 | NN-A770SB |
| P13 | E01054V00BP | Lower filler | 1 | |
| P14 | E01076700BP | Door sheet | 1 | |
| P15 | E01066750BP | Vinyl Cover | 1 | |
| P16 | E01926430GP | Protector sheet | 1 | NN-A720MB |
| P17 | E01044V00BP | Upper filler | 1 | |

# 19. Trim Kit Accessories

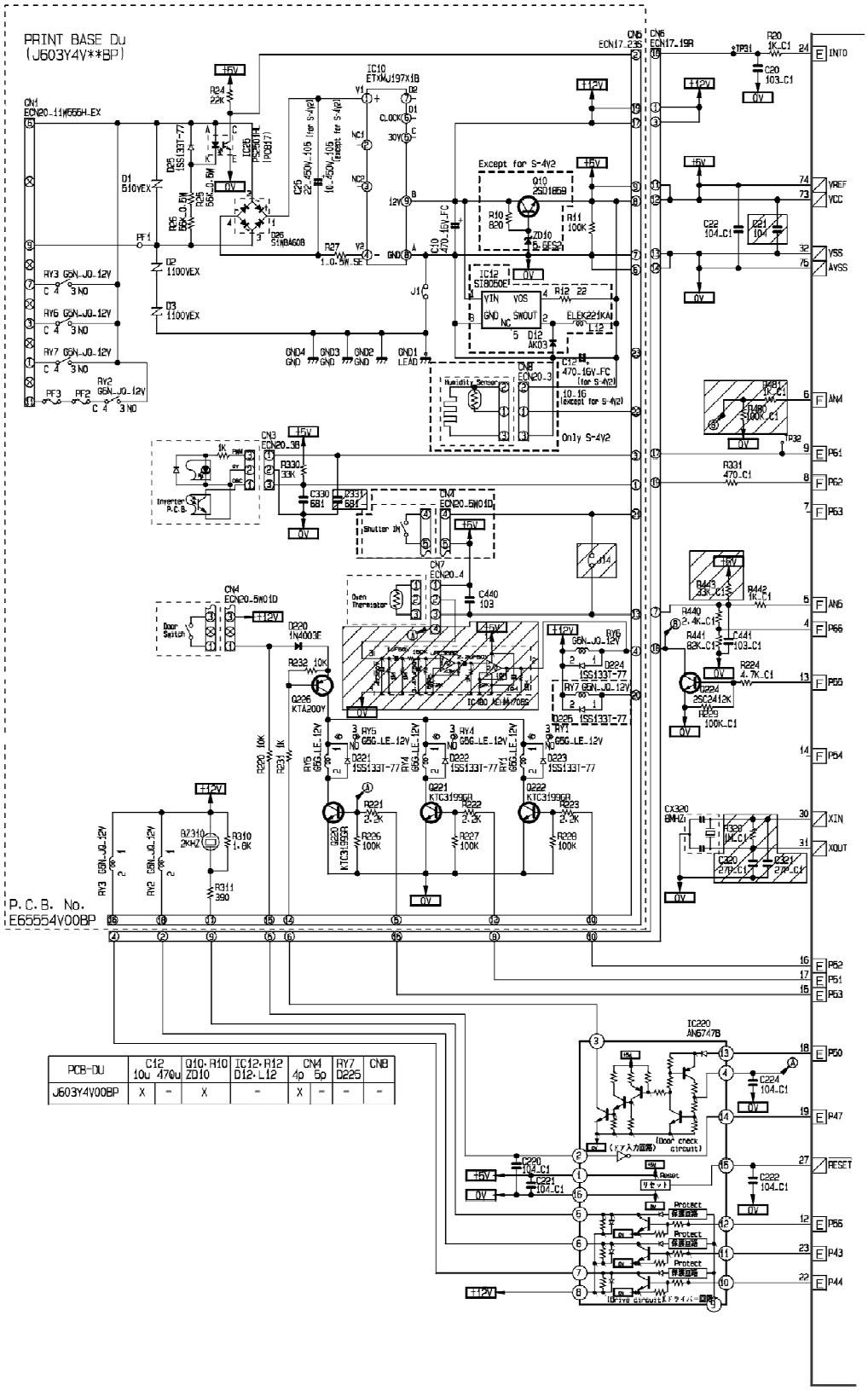



| Trim Model No. | Top and Bottom Strip REF NO. 1 | Set | Side Strip REF NO 2. | Set | Microwave Ovcen Model No. |
|---|---|---|---|---|---|
| NN-TKA70 | E1603A510HBP | 1 | E1601A510HBP | | NN-A750WB |
| | E1603A510HBP | | E1601A510HBP | | |
| NN-TKA70 | E1603A510NBP | 1 | E1601A510NBP | | NN-A720MB |
| | | | | | |
| INSTALLATION GUIDE | | | E000QA820BP | | |

# 20. Noise filter component parts

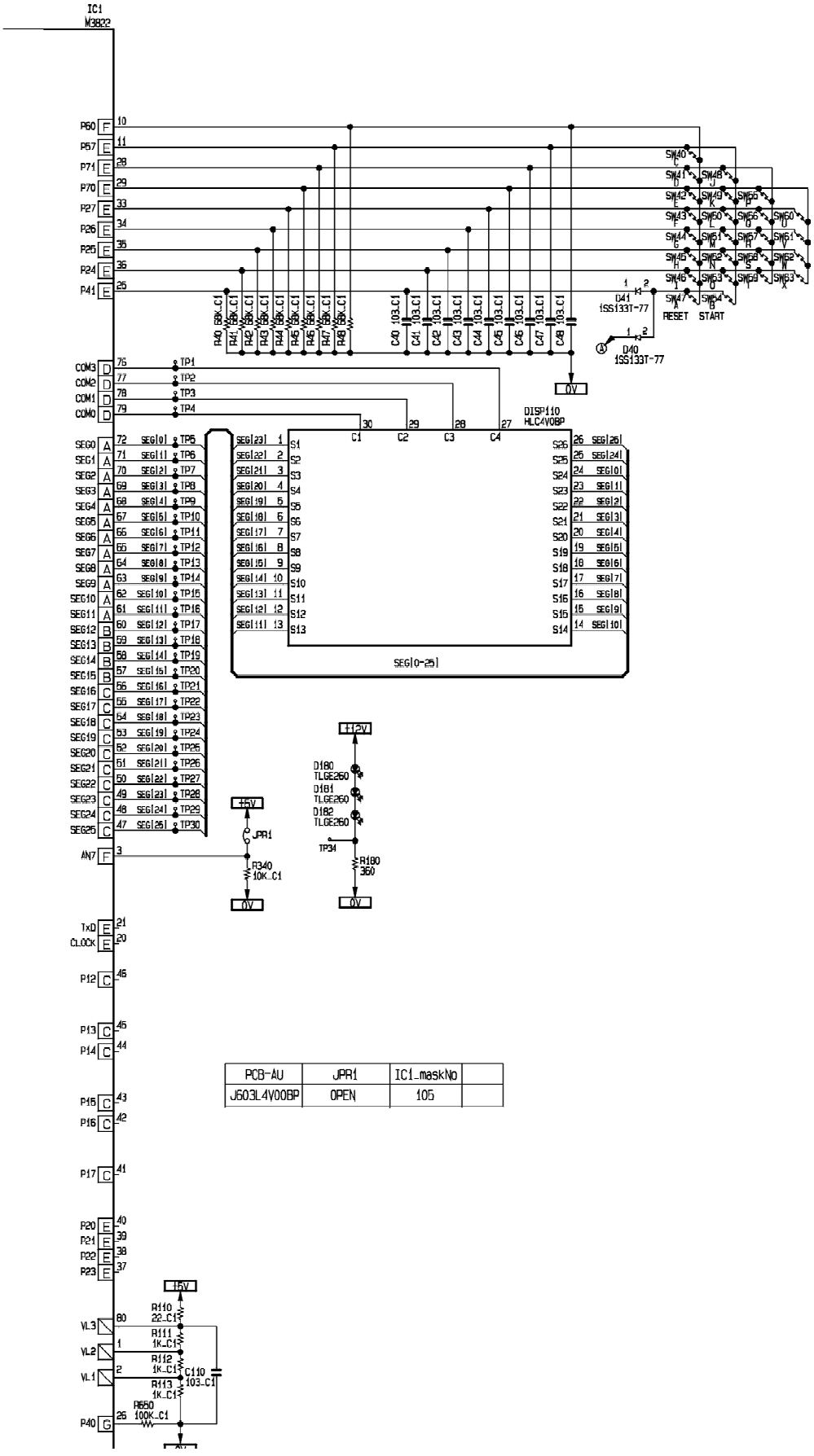
| Ref. No. | Part No. | Part Name & Description | Qty | Remarks |
|---|---|---|---|---|
| | | | | |
| R1 | ERG1SJ753P | Resistor | 1 | 75KW W |
| C1 & C2 | QETJ5225KRP2CE | Capacitor | 2 | 2.2mF |
| C3 & C4 | ECKMNA472ME | Capacitor | 2 | 4700pF 250V AC |
| L1 | SC-08-E203A | Inductor | 1 | 2.4mH |
| F1 | E62316010BP | Fuse Holder | 2 | |

# 21. Digital programmer Circuit

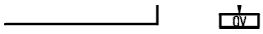



| PCB-Du | C12 10u | C12 470u | Q10·R10 ZD10 | IC12·R12 D12·L12 | CN4 4p | CN4 5p | RY7 D225 | CN8 |
|---|---|---|---|---|---|---|---|---|
| J603Y4V00BP | X | - | X | - | X | - | - | - |

**DPC Schematic 1**

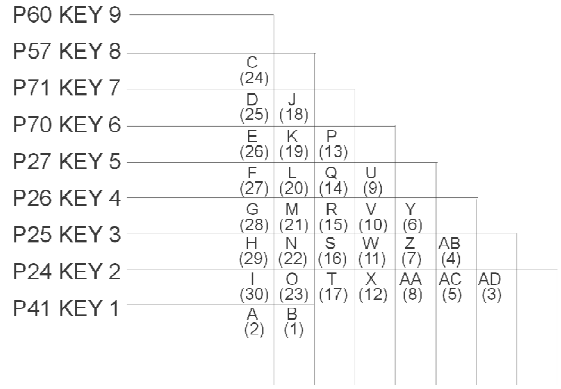


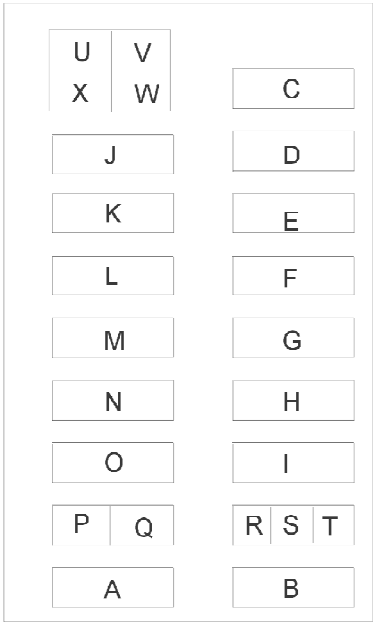

| PCB-AU | JPR1 | IC1_maskNo | |
|---|---|---|---|
| J603L4V00BP | OPEN | 105 | |



**DPC Schematic 2**

# 22. Key Board Matrix




| | |
|---|---|
| B(1) | START |
| A(2) | RESET |
| AA(3) | |
| AB(4) | |
| AC(5) | |
| Y(6) | |
| Z(7) | |
| AD(8) | |
| U(9) | 1HOUR |
| V(10) | 10 MIN |
| W(11) | 10 SEC |
| X(12) | 1 MIN |
| P(13) | STAND |
| Q(14) | CLOCK |
| R(15) | LB/OZ |
| S(16) | UP |
| T(17) | DOWN |
| J(18) | POWER |
| K(19) | GRILL |
| L(20) | CONVECTION |
| M(21) | GRILL |
| N(22) | COMBINATION |
| O(23) | AUTO(W.DEF) |
| C(24) | AUTO |
| D(25) | AUTO |
| E(26) | AUTO |
| F(27) | AUTO |
| G(28) | AUTO |
| H(29) | AUTO |
| I(30) | AUTO |

# 23. Digital programmer circuit parts list

## 23.1. E603L4L00BP DPC AU

| Ref. No. | Part Name | Description | Qty | Remarks |
|---|---|---|---|---|
| R180 | ERDS2TJ361T | Carbon Resistor | 1 | 360R |
| D40,D41 | AESS133T-77 | Diode | 2 | |
| D180-D182 | AESQTLGE260T | Green LED | 3 | |
| CX320 | EFOMC8004T4 | Ceramic Resonator | 1 | |
| SW40-SW63 | EVQ11L05R | Push Switch | 24 | |
| C110 C20 C40 -C48 C441 | AECU1F103Z50 | Chip Capacitor | 12 | 10nF |
| C220 C221 C222 C224 C22 | AECU1F104Z25 | Chip Capacitor | 5 | 100nF |
| R111-113 R20 R442 | AERJ3GSYJ102 | Chip Resistor | 5 | 1K |
| R340 | AERJ3GSYJ103 | Chip Resistor | 1 | 10K |
| R650 R229 | AERJ3GSYJ104 | Chip Resistor | 2 | 100K |
| R110 | AERJ3GSYJ220 | Chip Resistor | 1 | 22R |
| R440 | AERJ3EKF2401 | Chip Resistor 1% | 1 | 2.4K |
| R331 | AERJ3GSYJ471 | Chip Resistor | 1 | 470R |
| R224 | AERJ3GSYJ472 | Chip Resistor | 1 | 4.7K |
| R40-R48 | AERJ3GSYJ683 | Chip Resistor | 9 | 68K |
| R441 | AERJ3EKF8202 | Chip Resistor 1% | 1 | 82K |
| Q224 | 2SC2412KT146 | NPN Transistor | 1 | |
| IC1 | AEIC8224H105 | LSI M3822 (24K) | 1 | ! |
| DISP110 | AEDDHL4V00BP | LCD (NEW) | 1 | |
| CN6 | AEEM19FESVKN | CONNECTOR | 1 | |
| IC220 | AN6747B | Custom IC | 1 | |

## 23.2. E603Y4V00BP DPC DU

| Ref. No. | Part No. | Description | Qty | Remarks |
|---|---|---|---|---|
| ZD10 | AESZMTZ5R6B | Zener Diode | 1 | |
| D221-D224 | AESS133T-77 | Silicon Diode | 4 | |
| D25 | AESS133T-77 | Silicon Diode | 1 | |
| D220 | AESS1N4003E | Silicon Diode | 1 | |
| C330 | ECBT1H681KB5 | Capacitor | 1 | 680PF |
| C440 | ECBT1E103ZF5 | Capacitor | 1 | 10nF |
| R25,R26 | ERDS1FJ563T | Resistor | 2 | 56K 1/2 Watt |
| R220 R232 | ERDS2TJ103T | Resistor | 2 | 10K |
| R11 R226-R228 | ERDS2TJ104T | Resistor | 4 | 100K |
| R231 | ERDS2TJ102T | Resistor | 1 | 1.0K |
| R221-R223 | ERDS2TJ222T | Resistor | 3 | 2.2K |
| R24 | ERDS2TJ223T | Resistor | 1 | 22K |
| R330 | ERDS2TJ333T | Carbon Resistor | 1 | 33K |
| R311 | ERDS2TJ391T | Resistor | 1 | 390 |
| R10 | ERDS2TJ821T | Resistor | 1 | 820 |
| R310 | ERSD2TJ182T | Resistor | 1 | 1.8K |
| Q10 | 2SD1859TV2 | Transistor | 1 | |
| Q226 | AESAKTA200Y | PNP Transistor | 1 | |
| Q220-Q222 | AESCKTC3199GR | NPN Transistor | 3 | |
| C10 | EEUFC1C471B | Elect Capa | 1 | 470uF 16 V |
| C12 | ECEA1CKA100B | Electrolytic Capacitor | 1 | 10uF 16V |
| R27 | ERX12SJ1R0E | Watt Resistor | 1 | 1R 1/2 Watt |
| CN3 | AEEMXF00703B | 3 Pin Connector (Inverter) | 1 | |
| CN7 | AEEMMF00703R | 3 Pin Connector (OvenThermistor) | 1 | |

| Ref. No. | Part No. | Description | Qty | Remarks |
|---|---|---|---|---|
| CN4 | AEEMXF00D04W | 4 Pin Connector | 1 | |
| C25(COVER) | A6219-1850 | Capacitor Cover (small) | 1 | |
| RY2 RY3 RY6 | AEBGG5N1A12 | 12 V Relay | 3 | |
| RY1 RY4 RY5 | AEGG5G1A12 | 12 V Relay | 3 | |
| CN5 | AEEM19FEBVKN | 19 Pin Connector | 1 | |
| CN1 | AEEMXD55511W | 11 Pin Connector | 1 | |
| IC25 | AEICP25011HL | Photocoupler IC | 1 | |
| D26 | AESTS1WBA60B | Diode Bridge (600V) | 1 | |
| C25 | ECA2WHG100E | Electrolytic Capacitor | 1 | 10uF 450V |
| BZ310 | EFBAH20C001 | 2KHz Buzzer | 1 | |
| D2,D3 | ERZV10D112C1 | Varistor | 2 | 1100V |
| D1 | ERZV10D511CS | Varistor | 1 | 510V |
| IC10 | ETXMJ197X1BG | Switching Power Supply | 1 | |
| | | | | |
| | | | | |

## S-4V00BP / / / / SM